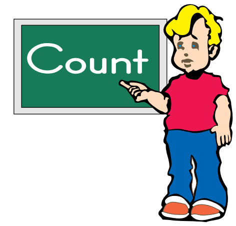
Horizons

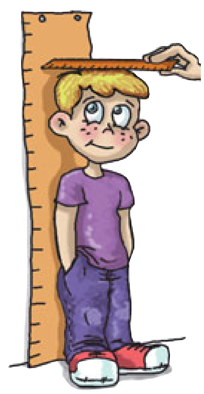
Math

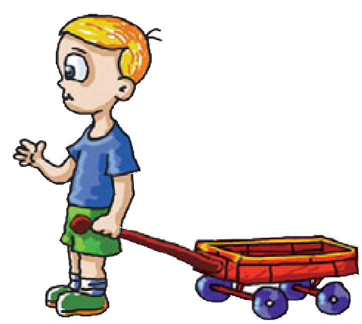
K

Lesson 1

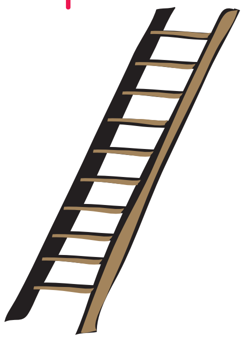
1 Count the children in the pictures below.



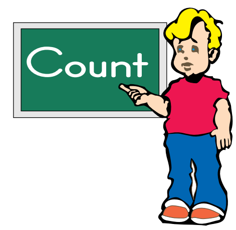


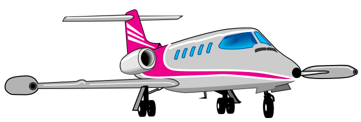


2 Circle the top of the ladder. Circle the bottom of the cup.

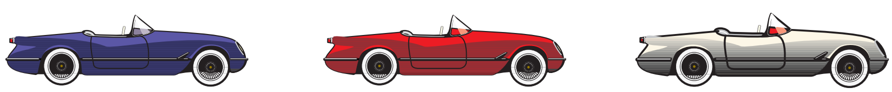


3 Count to to 5.



1 

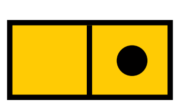
2 

3 

4 

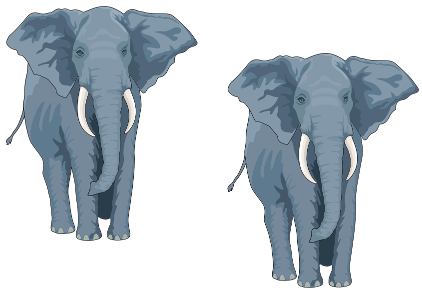
5 

4 Trace and write 1.

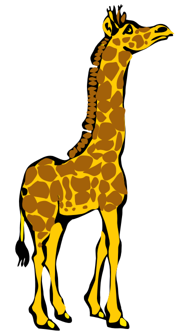


Lesson 2

1 Circle the correct number.

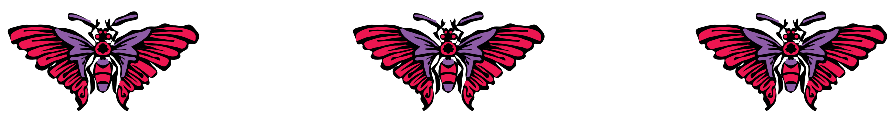


1
2
3

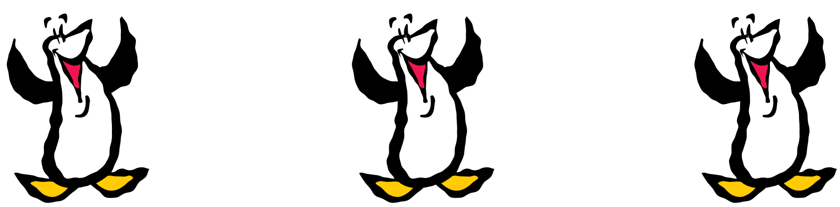


1
2
3

2 Circle the **first** one.

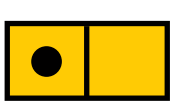


Circle the **last** one.

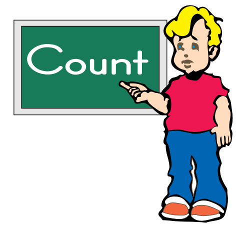


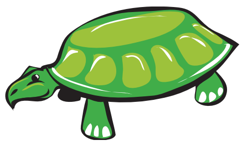
Circle the **middle** one.

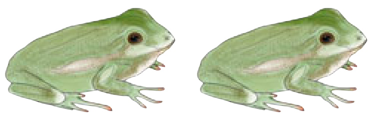
3 Trace and write 1.



④ Count to 10.

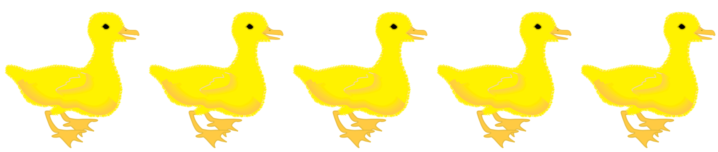


1 

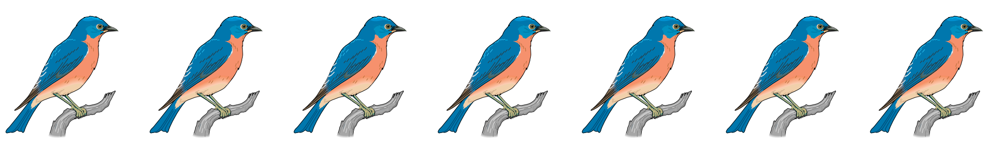
2 

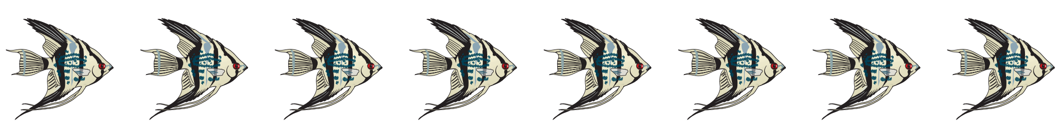
3 

4 

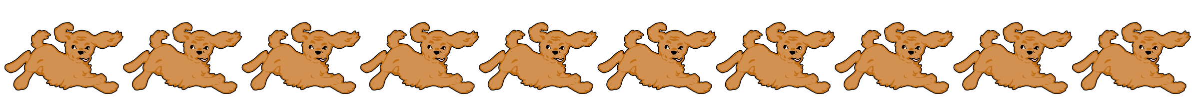
5 

6 

7 

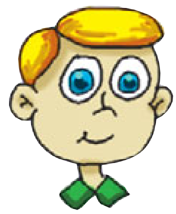
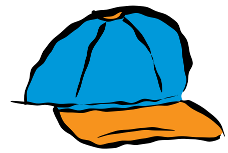
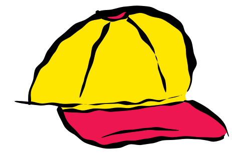
8 

9 

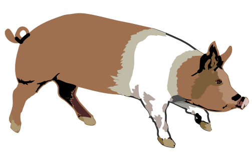
10 

Lesson 3

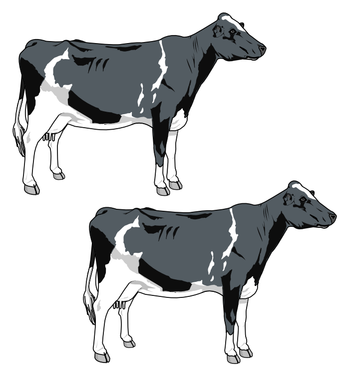
1 Circle the student on the right. Put an X on the left hat.

2 Circle the correct number.

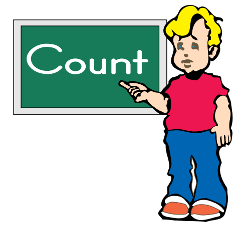


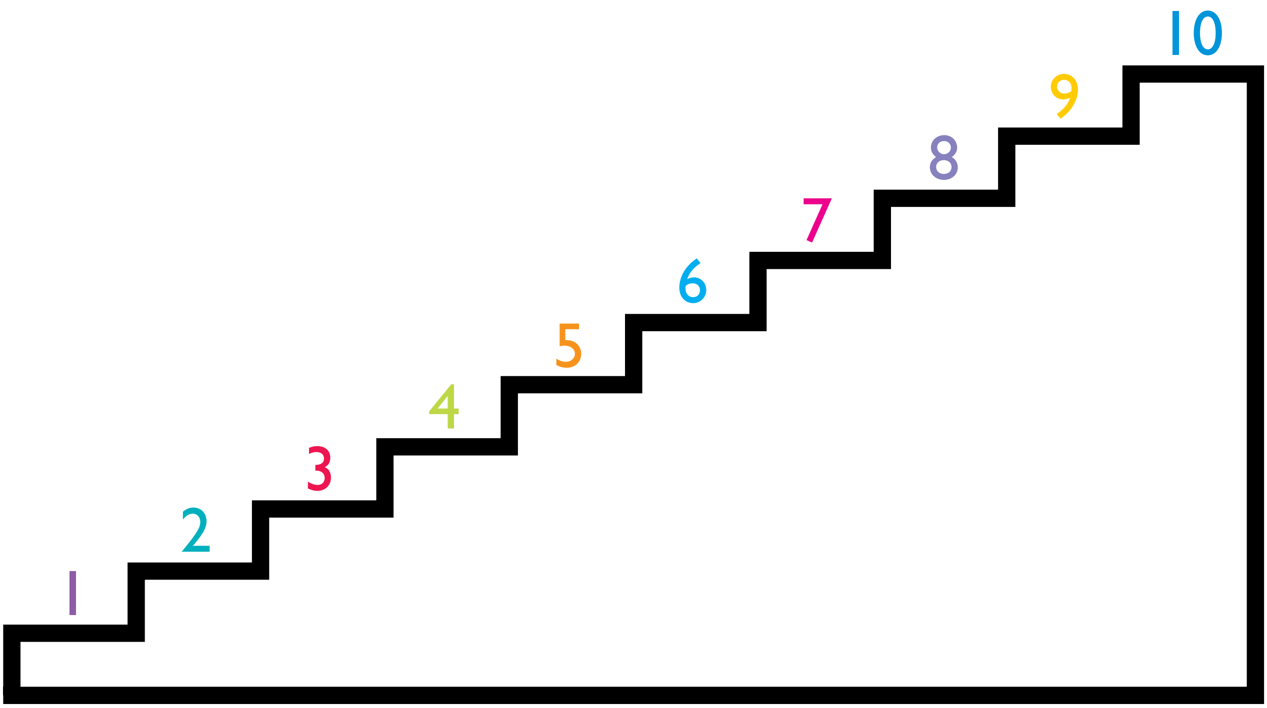
1
2
3



1
2
3

3 Count the steps.

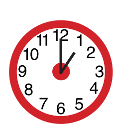


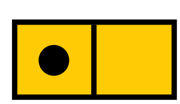


4 Circle the top step. Put an X on the bottom step.

5 Trace and write 1.

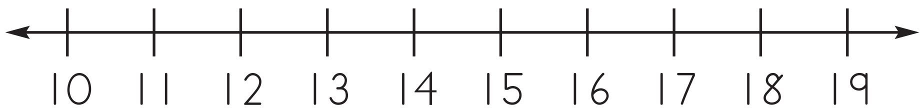
1





Lesson 81

1 Write the number before.



____ 12	____ 15	____ 14
____ 18	____ 19	____ 11
____ 16	____ 13	____ 17

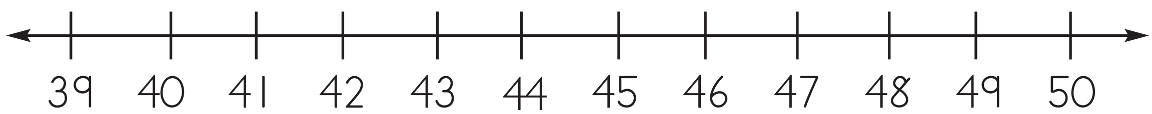
2 Circle the greater number in each pair.

12 6	4 7	18 11
5 8	13 19	15 2

3 Circle the smaller number of each pair.

13	7	5	8	19	12
6	9	12	18	16	3

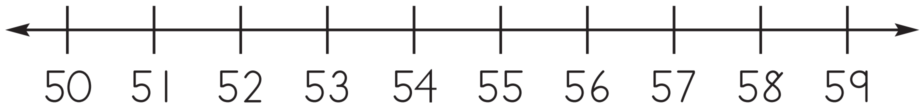
4 Add.



$44 + 1$	$48 + 1$	$41 + 3$	$43 + 2$	$49 + 1$
$39 + 1$	$42 + 4$	$45 + 3$	$46 + 1$	$48 + 2$
$40 + 3$	$47 + 2$	$44 + 2$	$41 + 4$	$50 + 0$

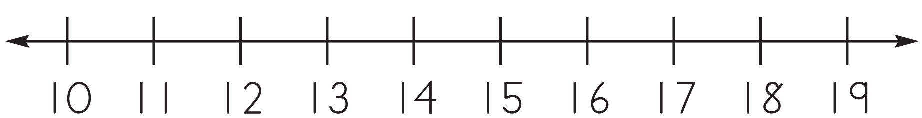
Lesson 82

1 Write the number after.



56 ____	51 ____	54 ____
58 ____	55 ____	50 ____
52 ____	57 ____	53 ____

2 Write the number before.



____ 19	____ 14	____ 12
____ 17	____ 16	____ 18
____ 11	____ 15	____ 13

3 Add.

30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49

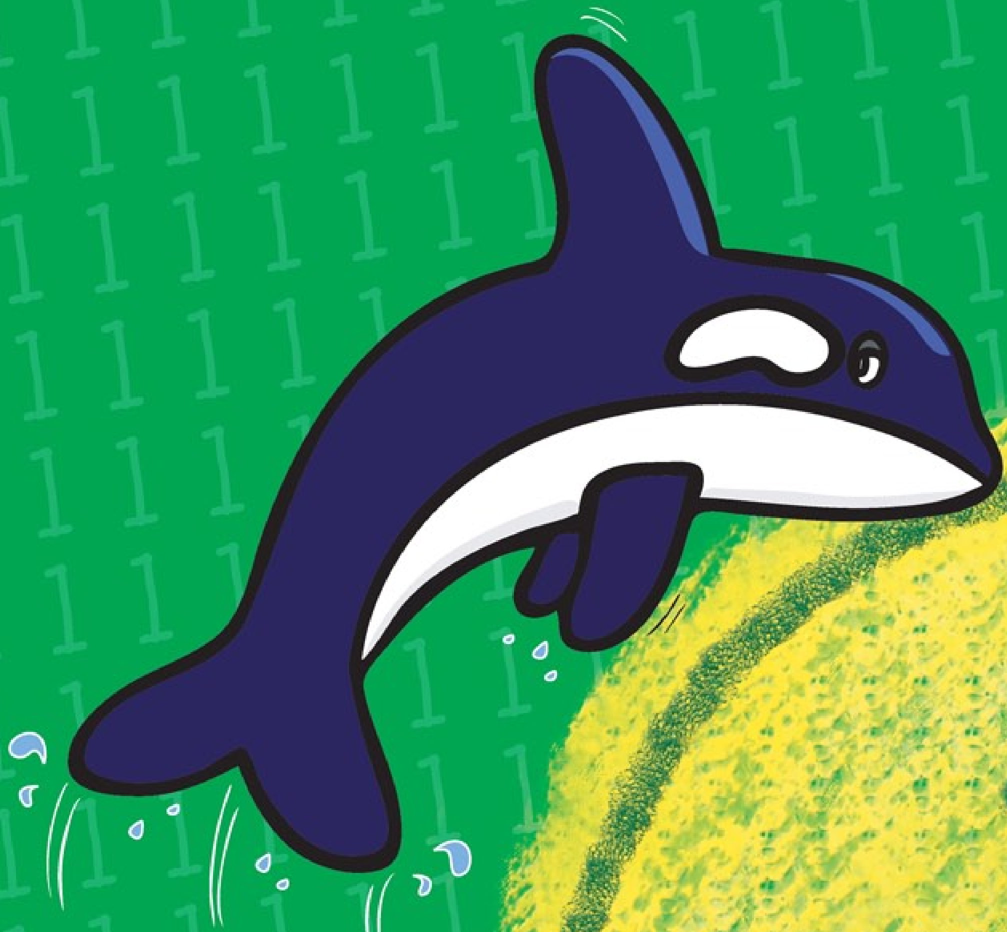
$32 + 1$	$44 + 4$	$41 + 3$	$35 + 4$
$39 + 1$	$46 + 3$	$42 + 1$	$33 + 2$
$30 + 2$	$40 + 0$	$43 + 2$	$37 + 1$

4 Circle the smaller number in each pair.

11 8	13 15	1 4
7 6	16 17	9 5

Horizons

Math



1

Lesson 1

NUMBERS

1 **Trace the numbers.**

0 1 2 3 4 5 6 7 8 9

2 **Write numbers 0–9.**

3 **Write in the missing numbers on the number line.**

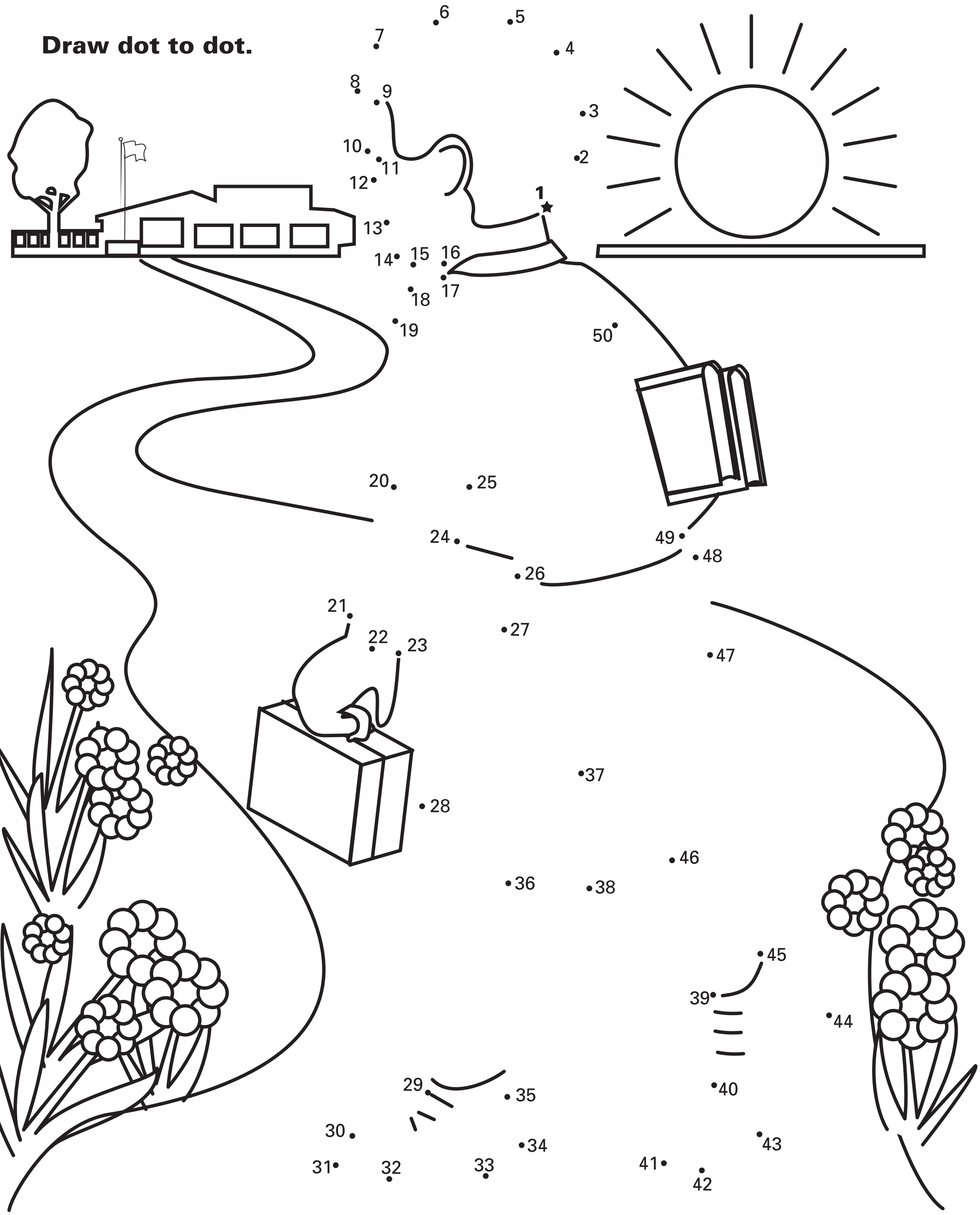
0 ___ 2 ___ ___ 5 ___ 7 ___ 9

___ ___ ___ 3 ___ ___ 6 ___ 8 ___

___ ___ ___ ___ ___ ___ ___ ___ ___ ___

④ Connect the dots.

Draw dot to dot.



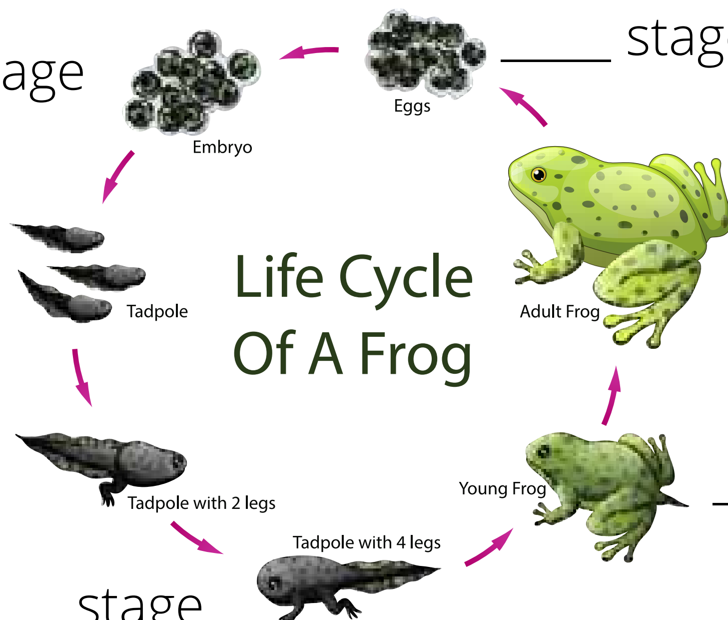
NUMBER ORDER – ORDINAL NUMBERS

1 **We use numbers to put things in order. Use ordinal numbers to label the stages in the life cycle of a frog beginning with the eggs.**

____ stage

____ stage

____ stage



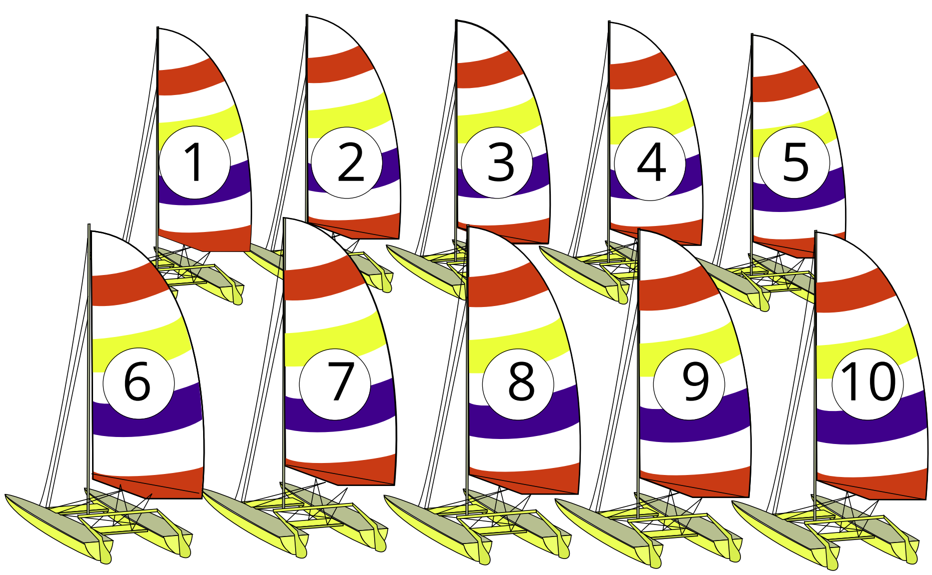
____ stage

____ stage

____ stage

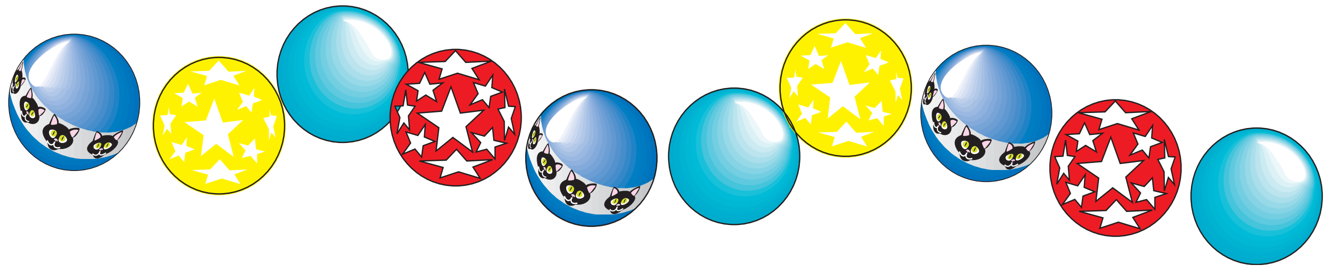
____ stage

2 **Look at the numbers on the sailboats. These numbers show order. Count the sailboats.**

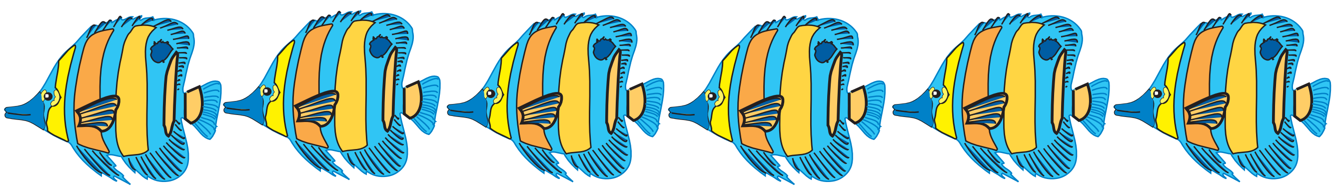


3 **Put an X on the first (1) sailboat. Circle the fifth (5) sailboat.**

4 **Count the balls. Put an X on the third (3) ball. Circle the eighth (8) ball.**



5 **Count the fish. Put an X on the second (2) fish.**



6 **Write the missing numbers.**

0 __ __ 3 __ __ __ 7 __ __

__ 1 __ __ __ __ 6 __ __ __

7 **Write the numbers in order.**

8 5 7 6

__ __ __ __

4 6 3 5

__ __ __ __

SETS

1 **Write the numbers 0–9.**

2 **Draw a set of 5 X's.** **Draw a set of 10 circles.**

3 **Write the missing numbers by 1's.**

1 ___ ___ 4 ___ 6 7

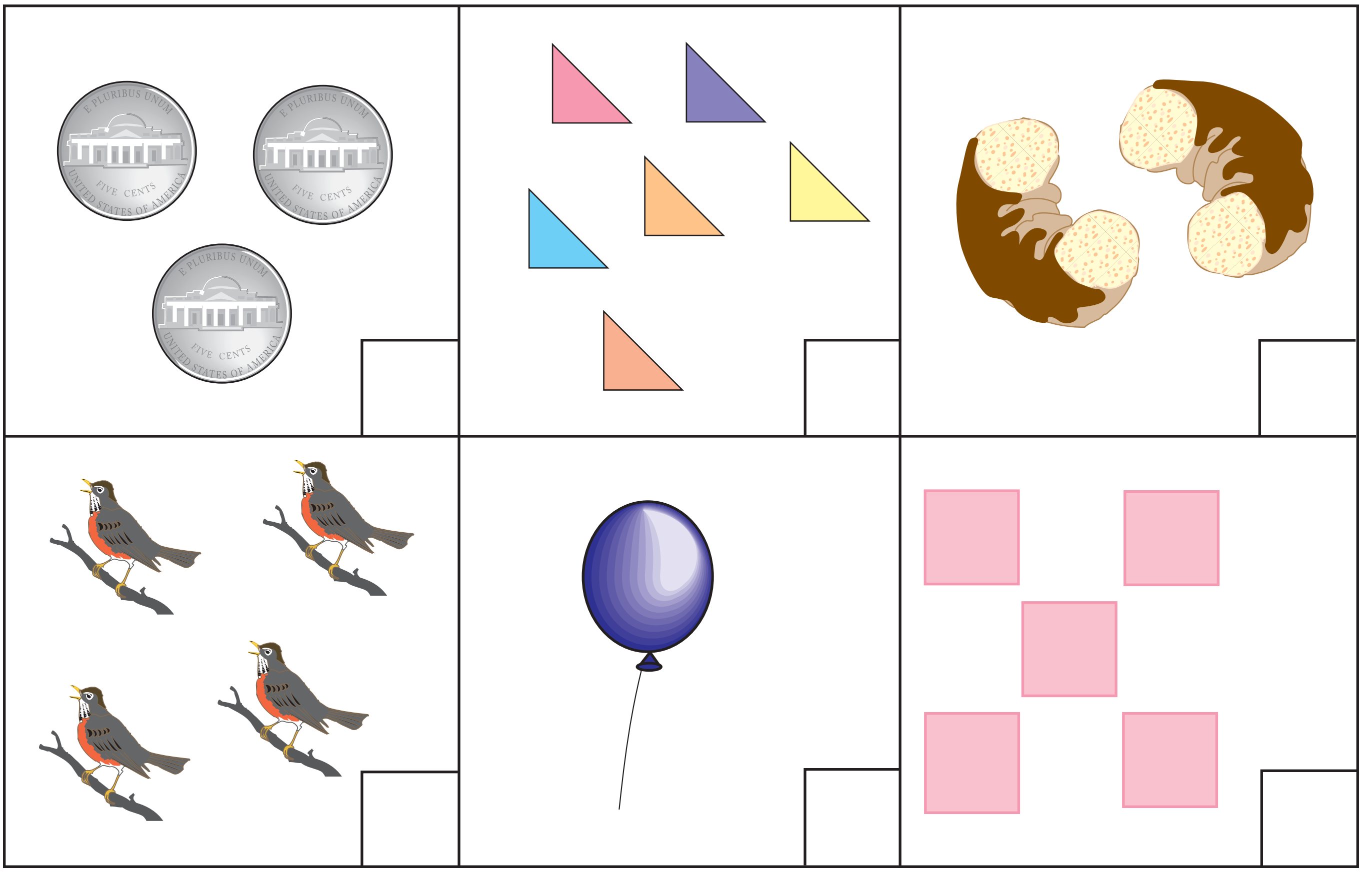
8 ___ 10 ___ 12 13 ___

15 ___ ___ 18 ___ 20 ___

4 **Write the missing numbers on the number line.**

0 ___ ___ ___ ___ ___ 6 ___ ___ ___

5 **Count the objects in each set. Write the number in the box.**



6 **Write the missing numbers by 1's.**

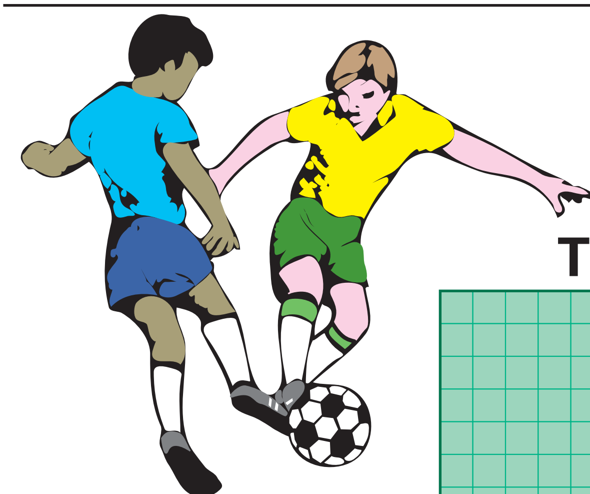
22	23	___	___	___	27	___
29	___	31	___	___	34	___
36	___	38	___	___	41	___
43	___	45	___	___	48	___

PLACE VALUE – ONE HUNDREDS

① The number 135 has three places. The 1 is in the hundreds' place. The 3 is in the tens' place. The 5 is in the ones' place.

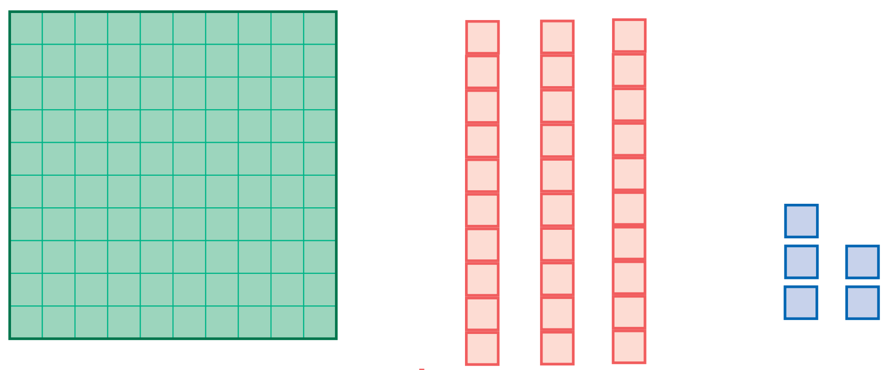
hundreds' place / tens' place / ones' place

1 3 5



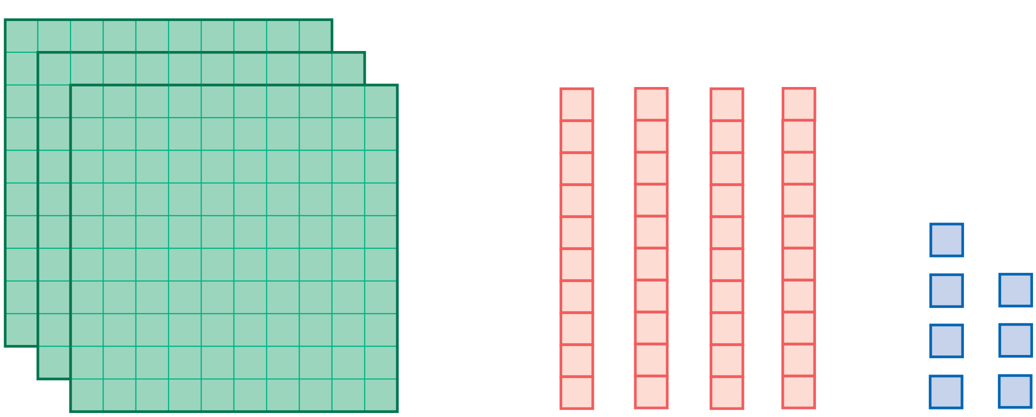
hundreds' place / tens' place / ones' place

The number 1 3 5 means:

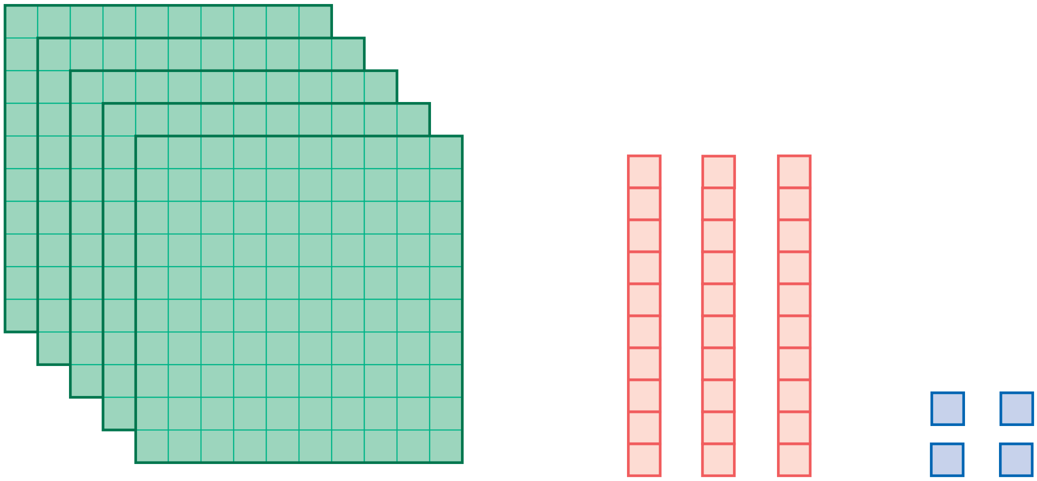


one group of hundreds | three groups of tens | five ones

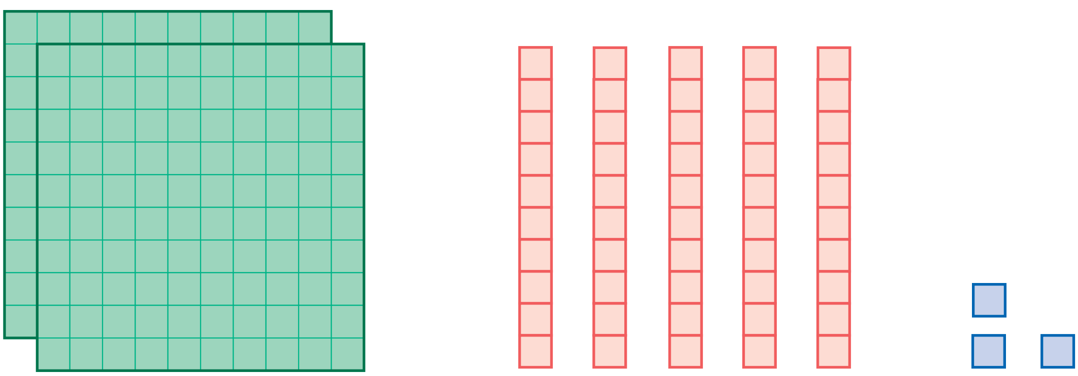
② Count the hundreds. Count the tens. Count the ones. Write the numbers.



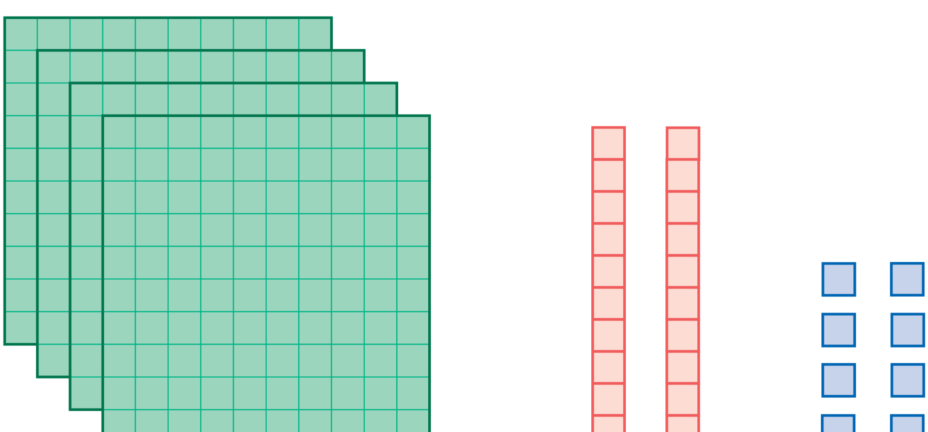
_____ hundreds _____ tens _____ ones = _____




_____ hundreds _____ tens _____ ones = _____

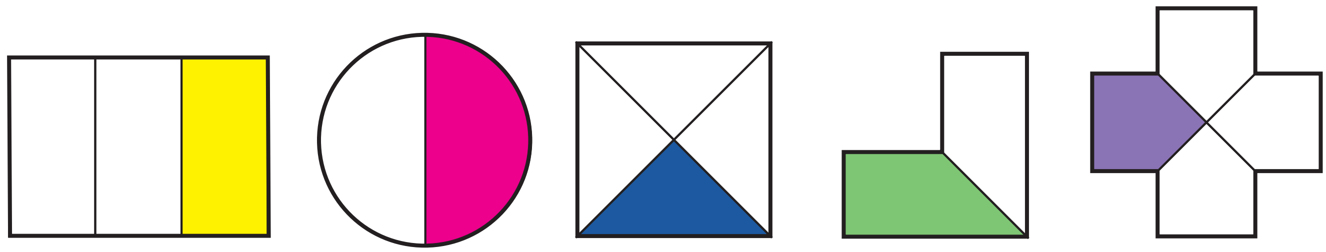


_____ hundreds _____ tens _____ ones = _____

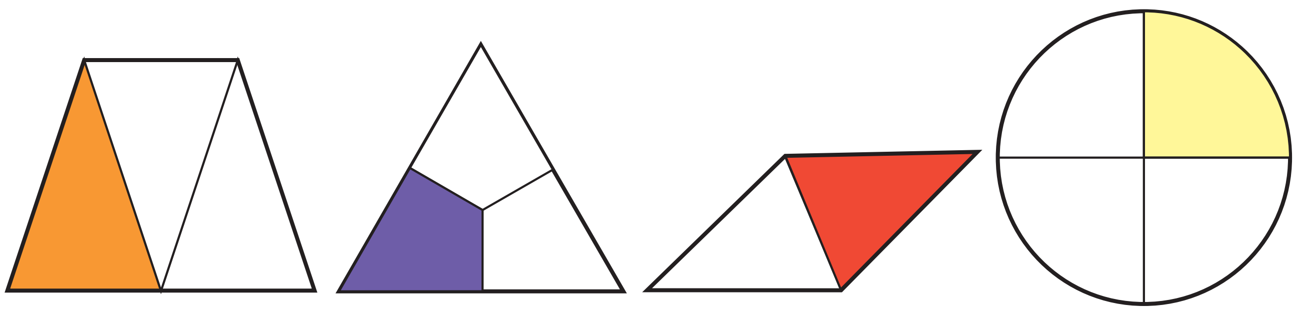


_____ hundreds _____ tens _____ ones = _____

3 Circle the correct answer.

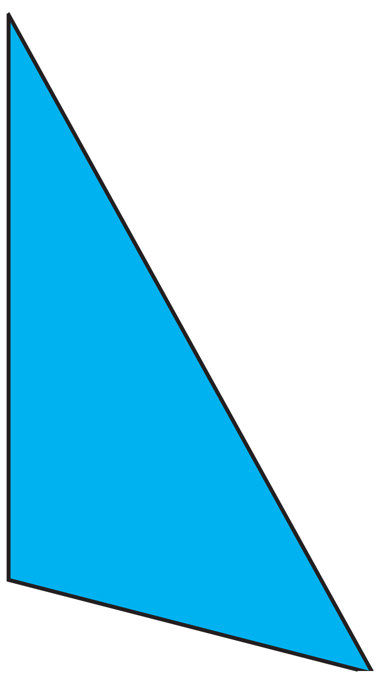


$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ | $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ | $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ | $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ | $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$



$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ | $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ | $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ | $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$

4 Write the answers.



How many inches is the longest side?

_____ inches

How many inches is the shortest side?

_____ inches

How many inches is the third side?

_____ inches

What is the distance around the triangle? _____ inches

⑤ Write the subtraction facts.

$6+1=7$	$2+6=8$	$4+3=7$
______	______	______
______	______	______
$7+2=9$	$2+5=7$	$1+7=8$
______	______	______
______	______	______

⑥ Subtract.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

$$\begin{array}{r} 10 \\ -\ 2 \\ \hline \end{array} \quad \begin{array}{r} 13 \\ -\ 4 \\ \hline \end{array} \quad \begin{array}{r} 14 \\ -\ 6 \\ \hline \end{array} \quad \begin{array}{r} 11 \\ -\ 3 \\ \hline \end{array} \quad \begin{array}{r} 13 \\ -\ 8 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ -\ 6 \\ \hline \end{array}$$

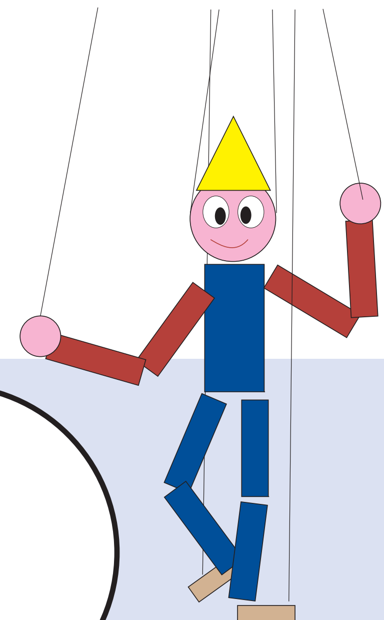
$$\begin{array}{r} 12 \\ -\ 5 \\ \hline \end{array} \quad \begin{array}{r} 15 \\ -\ 7 \\ \hline \end{array}$$

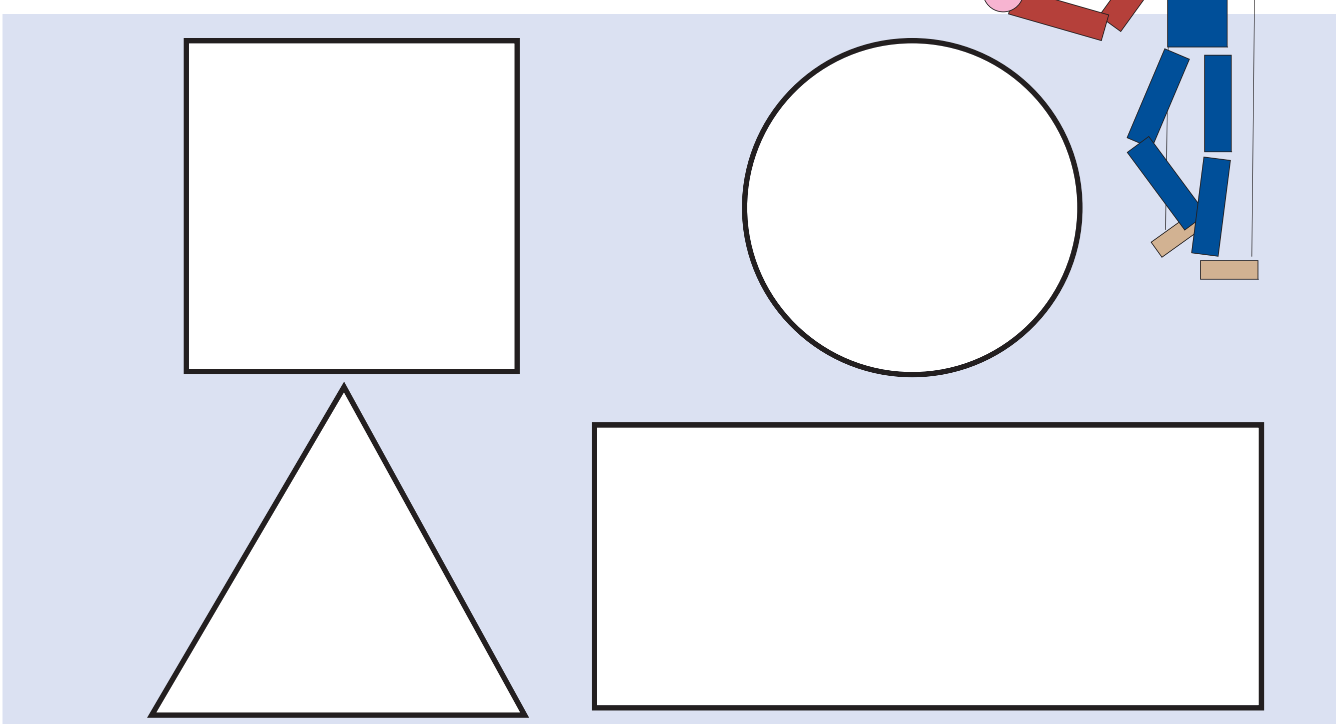
$$\begin{array}{r} 11 \\ -\ 9 \\ \hline \end{array} \quad \begin{array}{r} 14 \\ -\ 7 \\ \hline \end{array}$$

SHAPES

circle　　square　　triangle　　rectangle

1. Color the circle red.
   Color the triangle blue.
   Color the square yellow.
   Color the rectangle green.

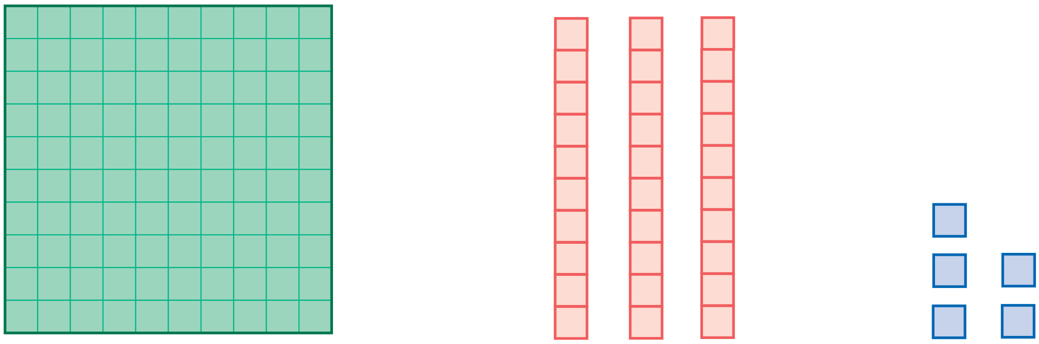


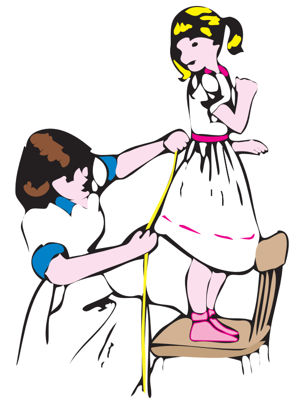


2. **Write the number.**

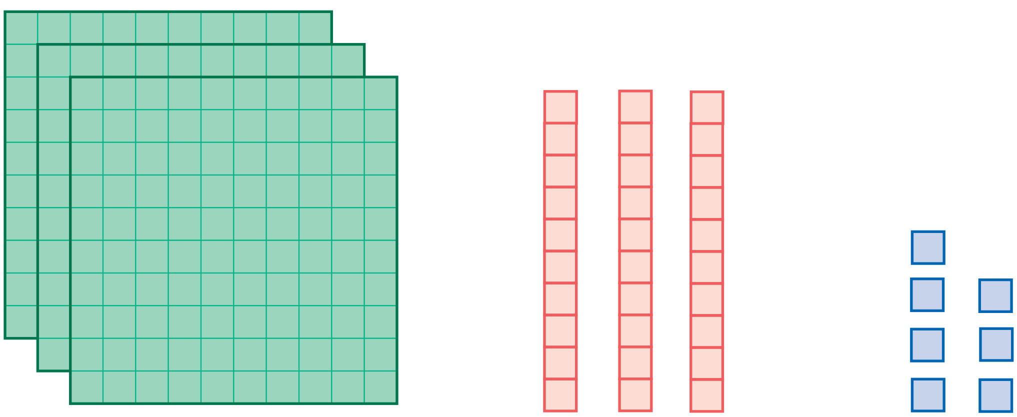
twenty-six	_____	ninety-five	_____
fifty-two	_____	thirty-three	_____
seventy-four	_____	eighty-seven	_____
thirteen	_____	sixty-nine	_____

③ Write the numbers.





_____ hundreds _____ tens _____ ones = _____



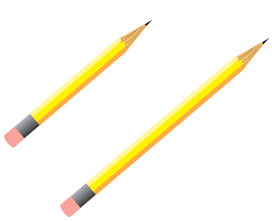
_____ hundreds _____ tens _____ ones = _____

④

Alvin had three cookies for lunch. He gave one to Lewis. How many cookies did Alvin have left?

_____ - _____ = _____ ____________________

Norma had 7 pencils. She broke the lead on 3. How many pencils did Norma have left that she could use?

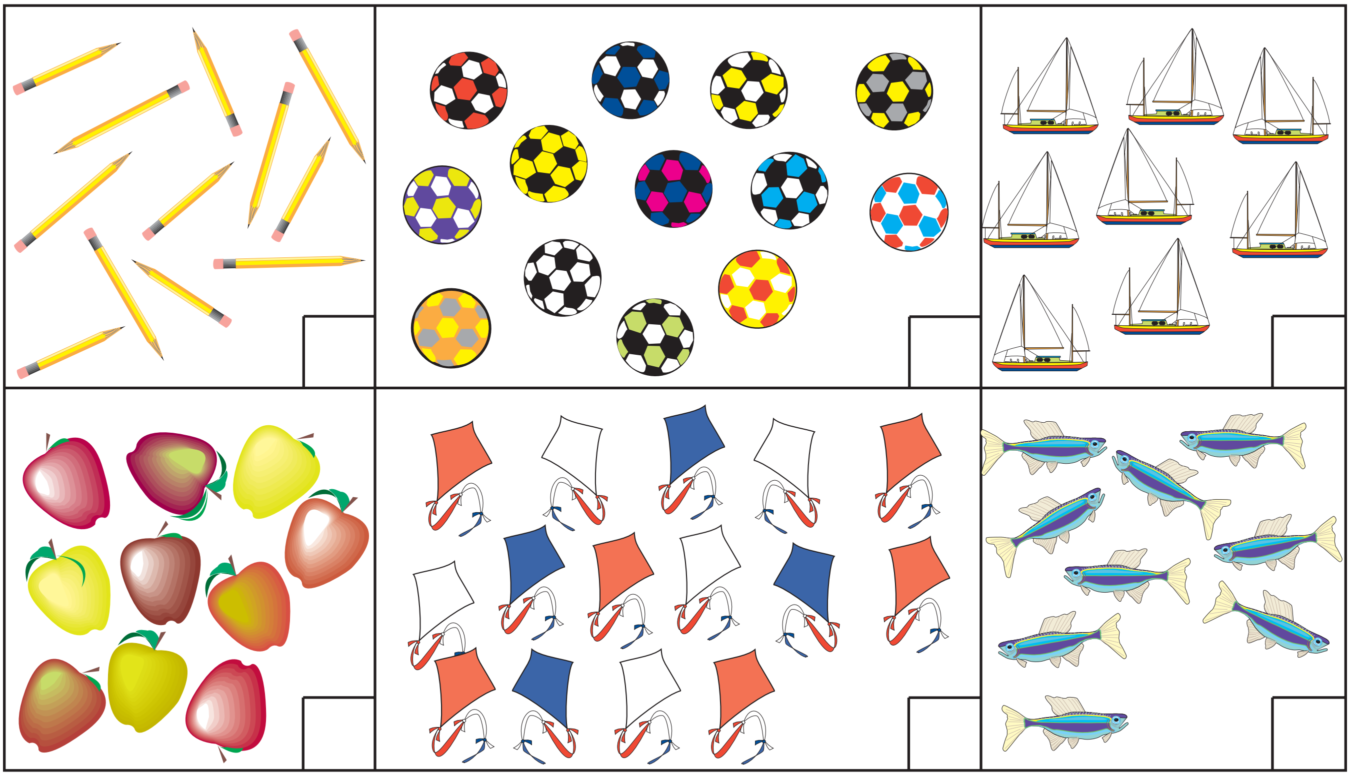


_____ - _____ = _____ ____________________

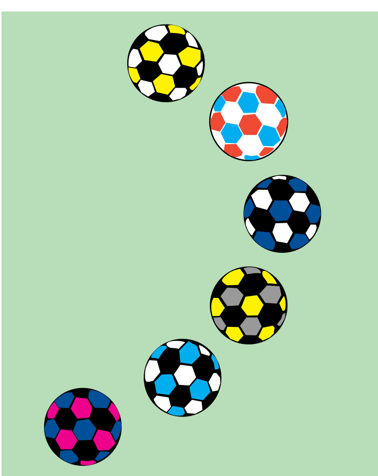
Horizons

Math

1 **Count each set. Write the number.**



2 **Write the missing numbers.**



0									
				14					
		22							
							37		
									49

3 **Write the numbers that come before and after.**

____ 8 ____   ____ 15 ____   ____ 22 ____   ____ 37 ____

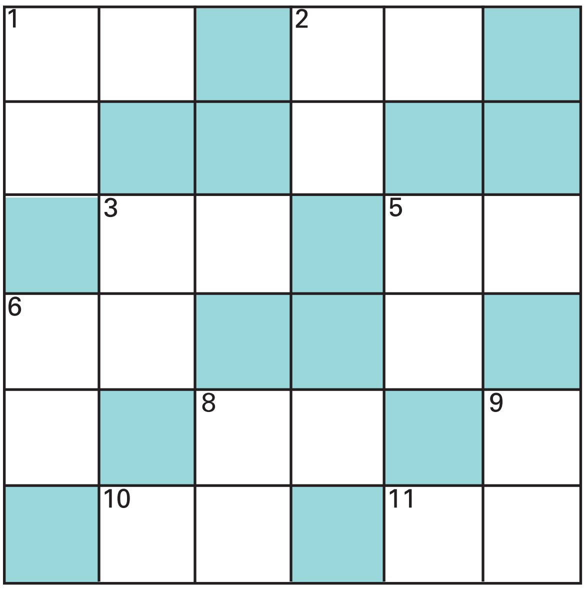
____ 41 ____   ____ 50 ____   ____ 64 ____   ____ 73 ____

4 **Write the letters on the blanks.**

_____ _____ _____ _____ _____ _____ _____   _____ _____ _____ _____

second	E	seventh	E	fourth	C	first	W
sixth	M	third	L	fifth	O	eighth	B
tenth	C	ninth	A	eleventh	K		

5



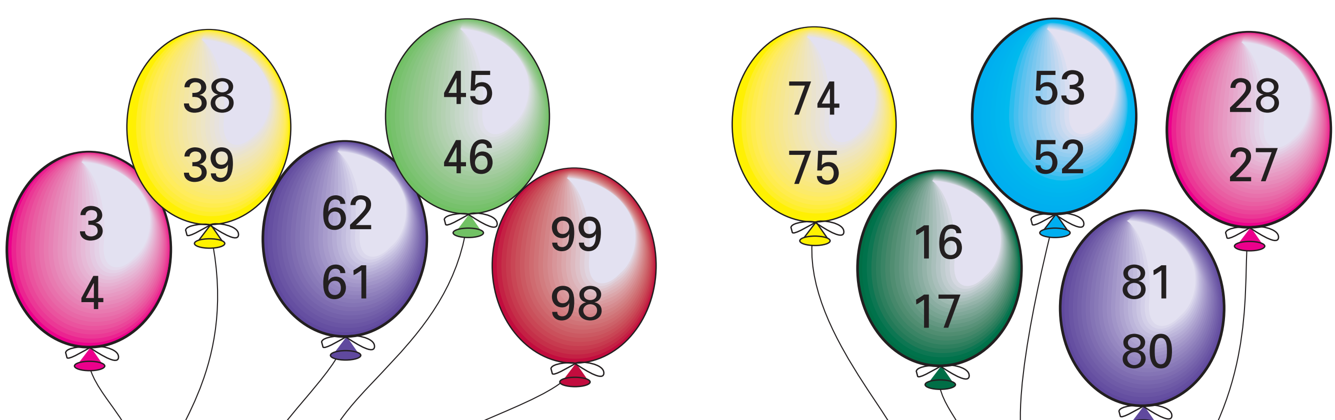
Across

1. The number before 35
2. 68 - 1=
3. The number after 13
5. 82 + 1=
6. The number after 49
8. 73 - 1=
10. The number before 61
11. 24 + 1=

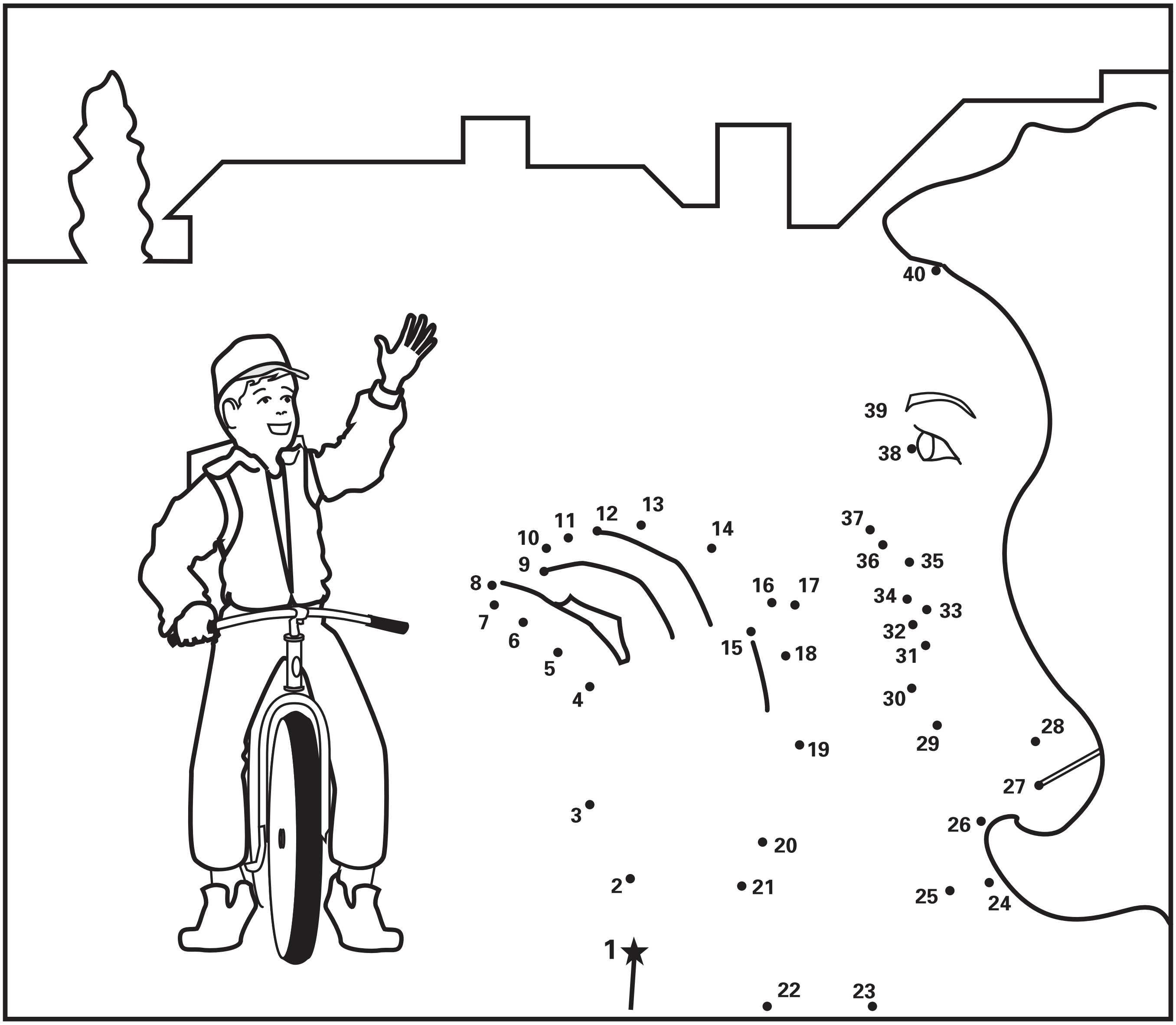
Down

1. 38 + 1=
2. The number after 61
3. 11 - 1=
5. 90 - 1=
6. The number after 57
8. 69 + 1=
9. The number before 16

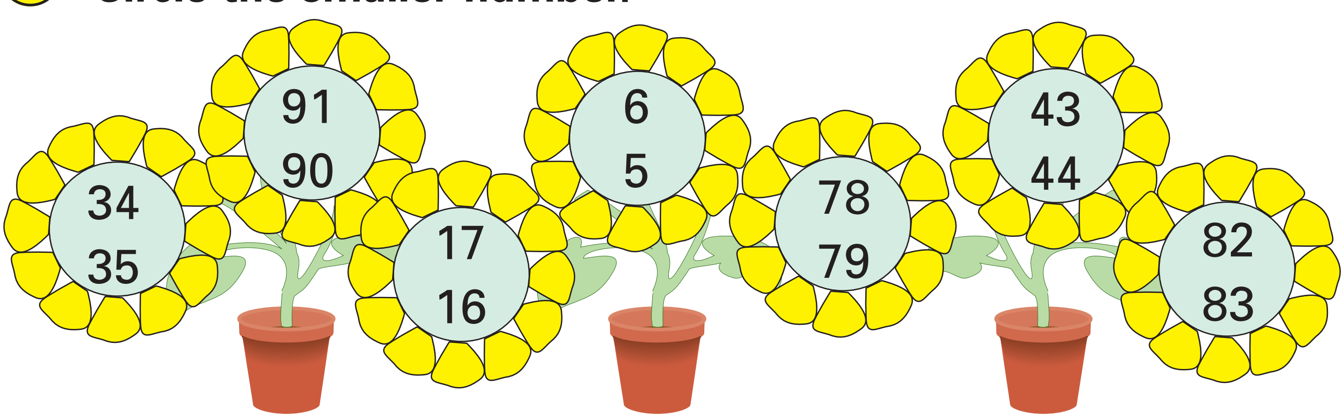
6 **Circle the larger numbers.**



1 **Connect the dots.**

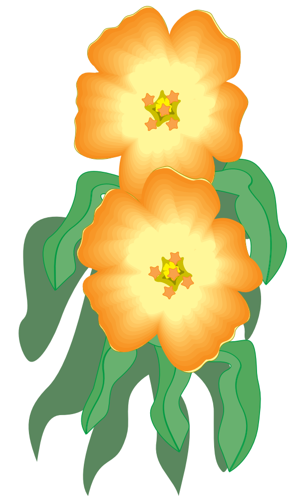


2 **Circle the smaller number.**



3 Write the missing numbers.

50									
			63						
							77		
					85				
									99



4 Write the numbers that come before and after.

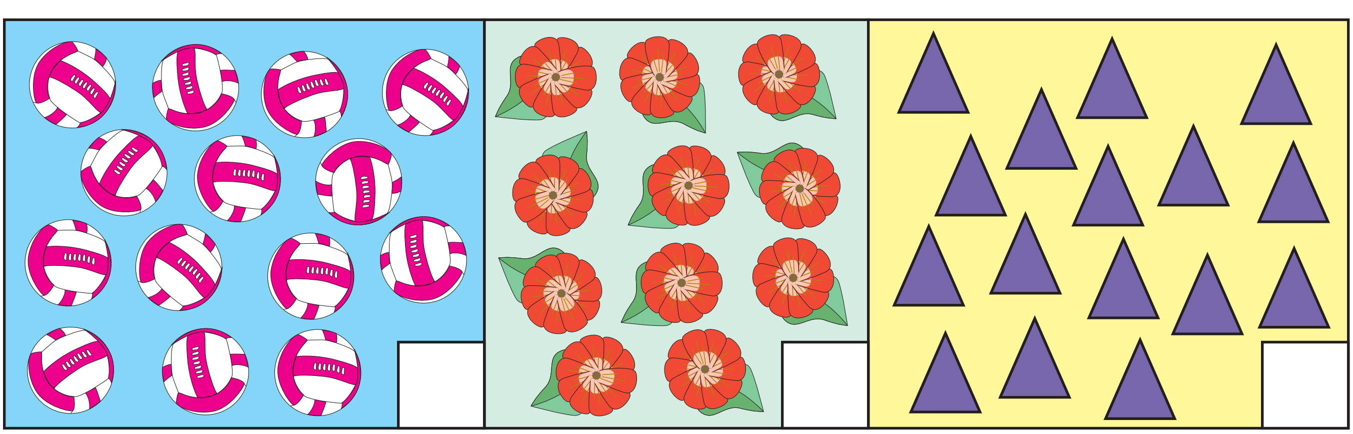
____ 7 ____ ____ 13 ____ ____ 21 ____ ____ 80 ____

____ 46 ____ ____ 59 ____ ____ 68 ____ ____ 92 ____

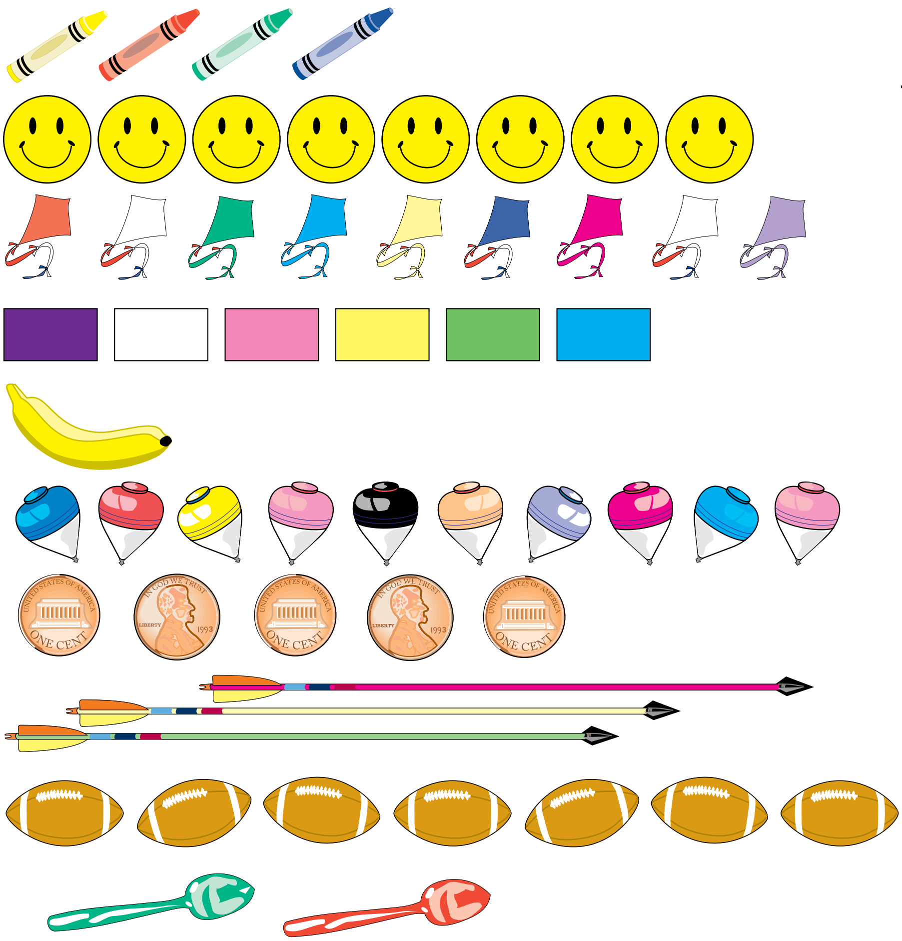
5 Match the ordinal numbers.

first	3rd	sixth	7th
second	5th	seventh	10th
third	2nd	eighth	6th
fourth	1st	ninth	8th
fifth	4th	tenth	9th

6 Count each set. Write the number.



1 **Make a tally mark for each object.**



2 **Write the number that is one more.**

60 ____	39 ____	24 ____	85 ____
18 ____	6 ____	77 ____	96 ____
47 ____	72 ____	51 ____	33 ____

3 **Write the number that is one less.**

____ 23	____ 89	____ 54	____ 38
____ 76	____ 17	____ 95	____ 5
____ 40	____ 56	____ 32	____ 71

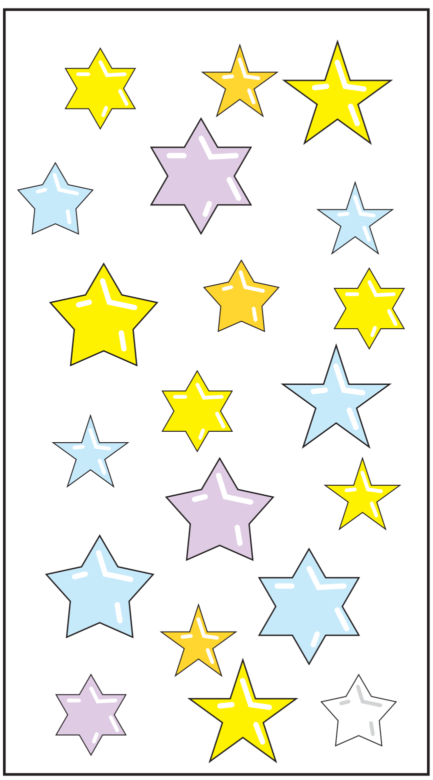
4 **Write the letters on the blanks.**

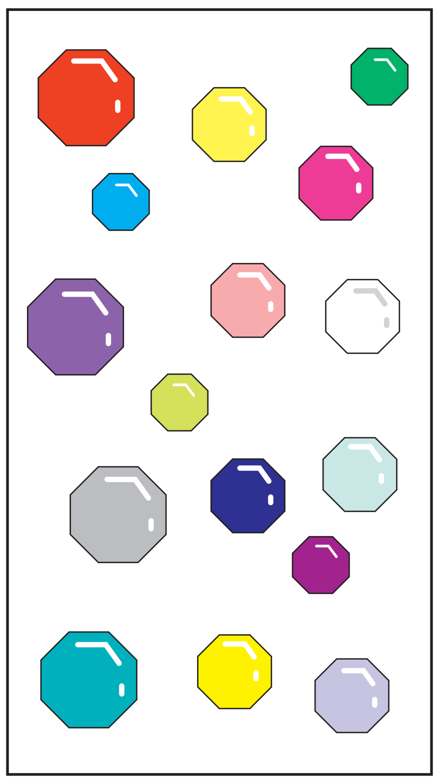
___ ___   ___ ___ ___ ___   ___ ___

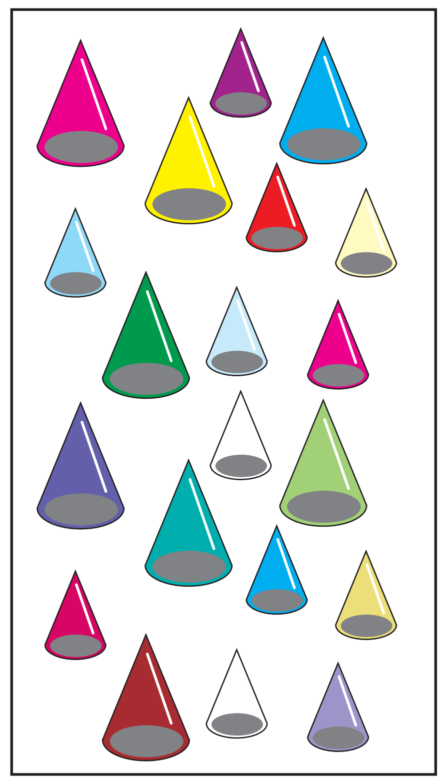
___ ___ ___   ___ ___ ___ ___ ___ ___ ___

seventeenth	E	ninth	O	sixth	D
fourth	I	fifth	N	tenth	N
twelfth	A	eleventh	E	third	K
first	B	second	E	sixteenth	H
fourteenth	O	eighteenth	R	thirteenth	N
eighth	O	fifteenth	T	seventh	T

5 **Circle 17 stars.** **Circle 12 octagons.** **Circle 18 cones.**



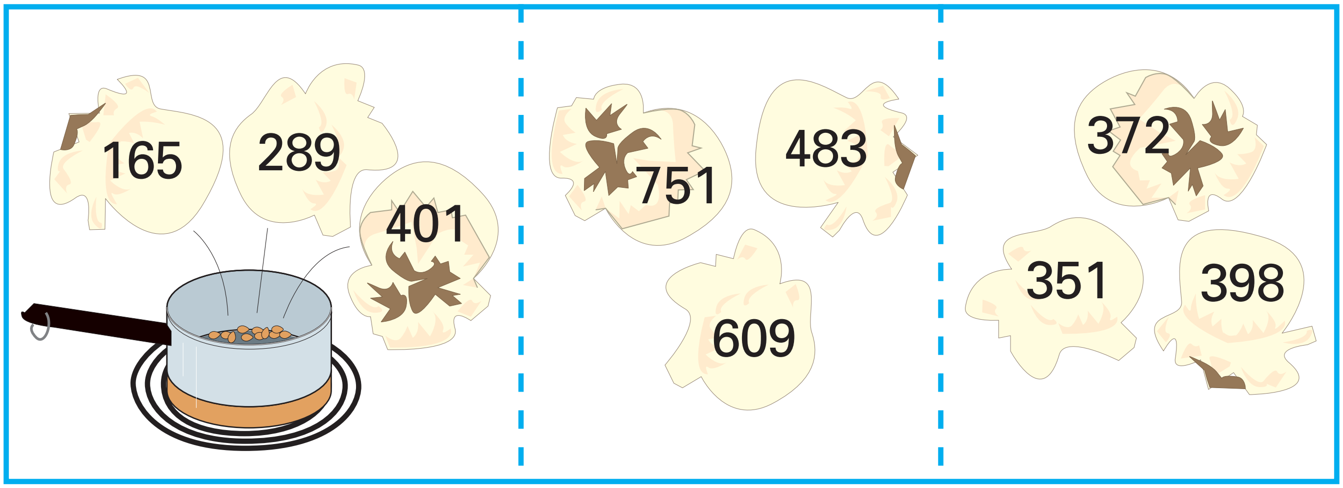




6 **Write the numbers in order.**

23	25	28	21	27	24	29	22	26
___	___	___	___	___	___	___	___	___

1 **Circle the least number.**



2 **Write as a number sentence.**

Sixty-five and twenty-eight equals ninety-three. ______________

Ten added to seventy-four equals eighty-four. ______________

Forty-three plus seventeen equals sixty. ______________

The sum of thirty-one and fifty-eight is eighty-nine. ______________

Twenty-five increased by thirteen is thirty-eight. ______________

3 **Find the sum and check.**

374 182 +211	102 584 +192	360 286 +312	326 471 +192	139 329 +220	342 282 +121	111 539 +133
450 173 +122	431 215 +191	332 130 +291	122 228 +349	212 236 +438	471 253 +151	172 443 +150

4 **Put an X on the numbers out of sequence.**

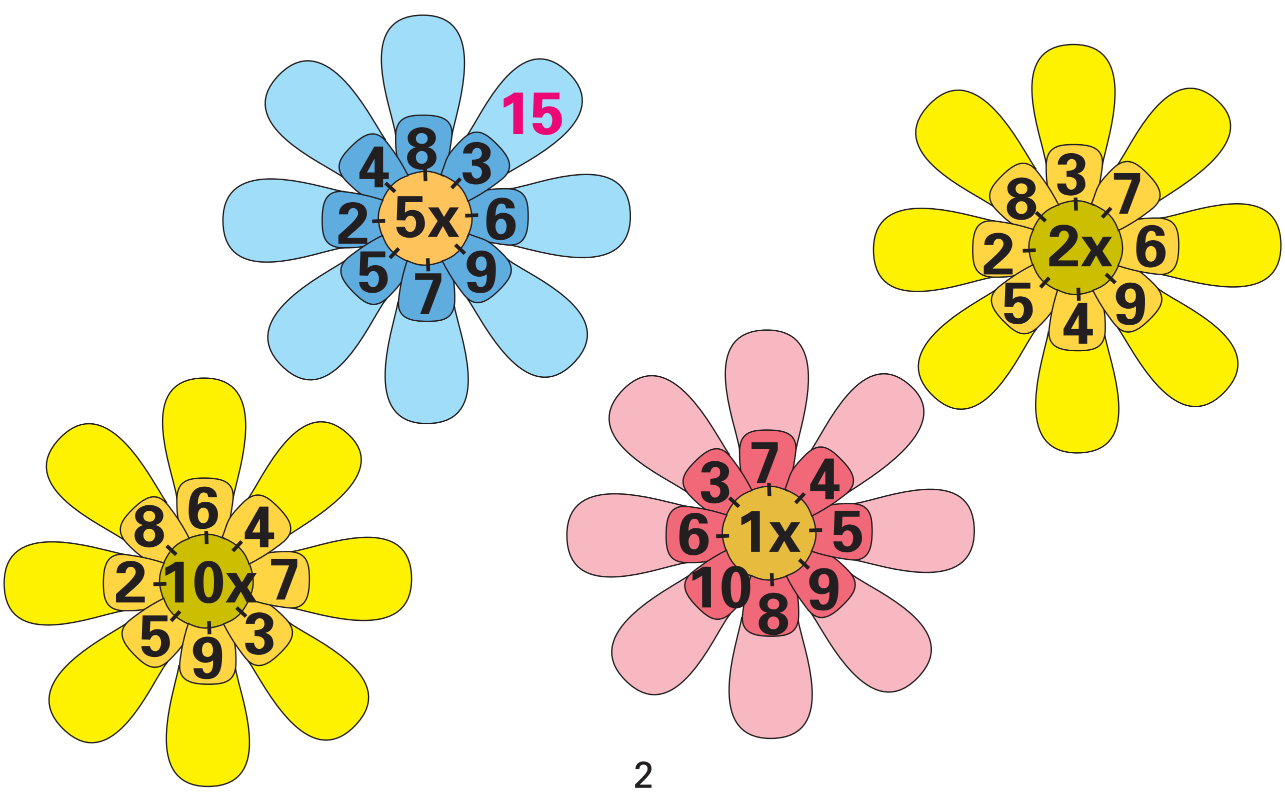
236	238	240	241	244	246	248
249	252	253	256	258	260	261
264	266	268	271	272	275	276

5 **Subtract to find the difference. Check your answers.**

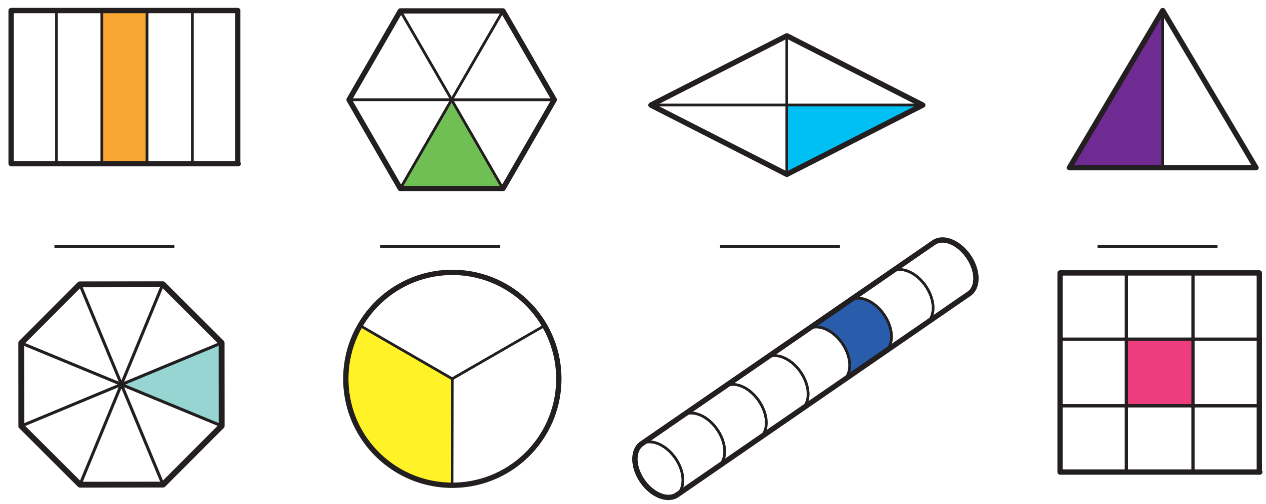
9,780	4,574	6,392	7,826	6,982	9,873
- 9,175	- 3,326	- 2,183	- 3,018	- 1,765	- 6,545

8,931	6,941	8,931	7,690	8,497	4,651
- 4,225	- 3,512	- 2,407	- 5,439	- 3,019	- 2,529

6 **Write the numbers.**



1 **Write the fraction that shows what part is shaded.**



2 **Multiply to find the product.**

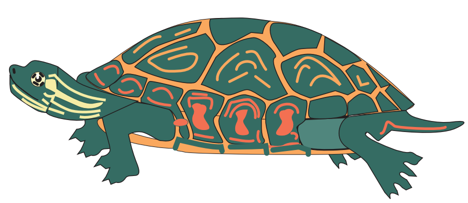
X	2	4	7	3	0	6	8	9	5	10	1
5											

X	7	1	4	6	3	9	0	10	8	2	5
2											

3 **Find the sum and check.**

171	184	417	228	216	241	185
259	355	296	277	395	386	296
+136	+316	+182	+270	+143	+109	+404

258	337	178	174
163	315	453	433
+112	+161	+101	+134



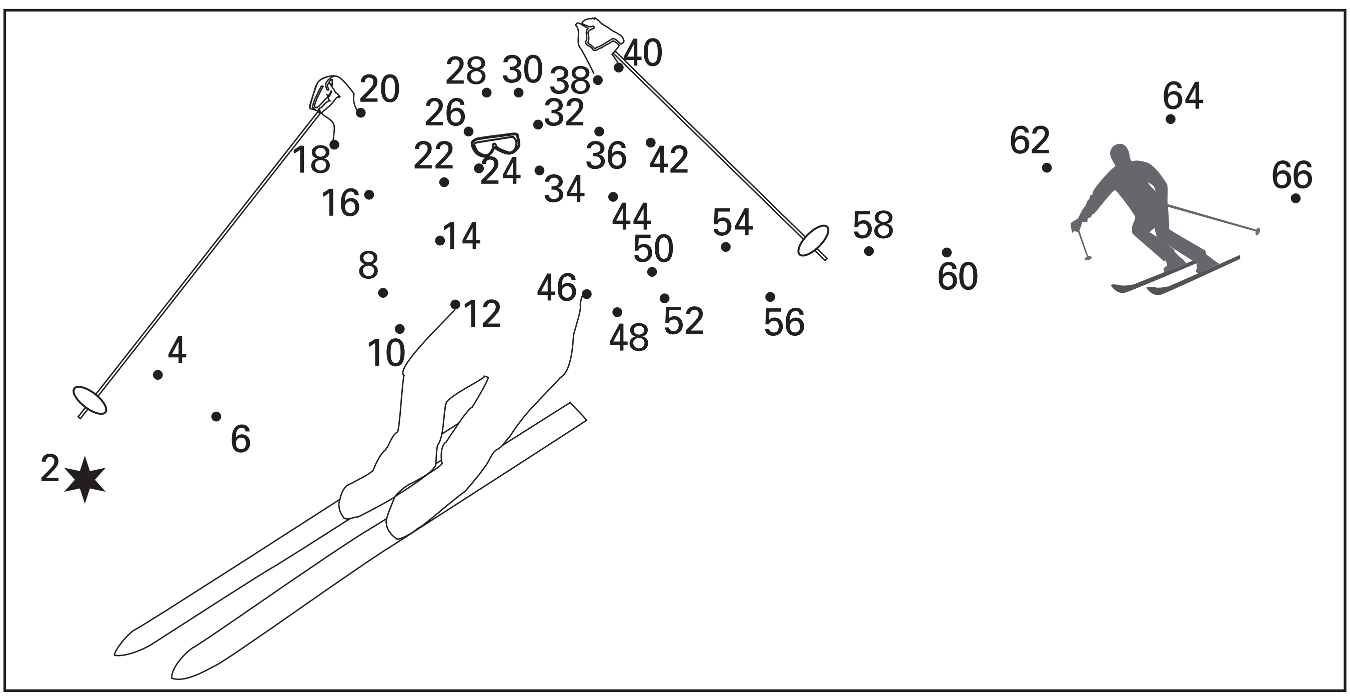
4 **Write the value.**

____¢ ____¢ ____¢

5 **Put an X on the numbers out of sequence.**

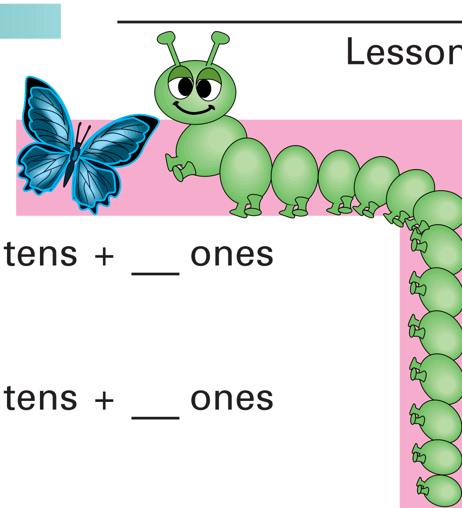
603	606	609	614	615	618	620
624	627	631	633	635	639	642
645	646	651	654	657	662	663

6 **Connect the dots counting by 2's.**



Horizons

Math



1. **Write the numbers in standard form.**

three thousand, eight hundred sixty-one
_____ = _____ thousands + ____ hundreds + __ tens + __ ones

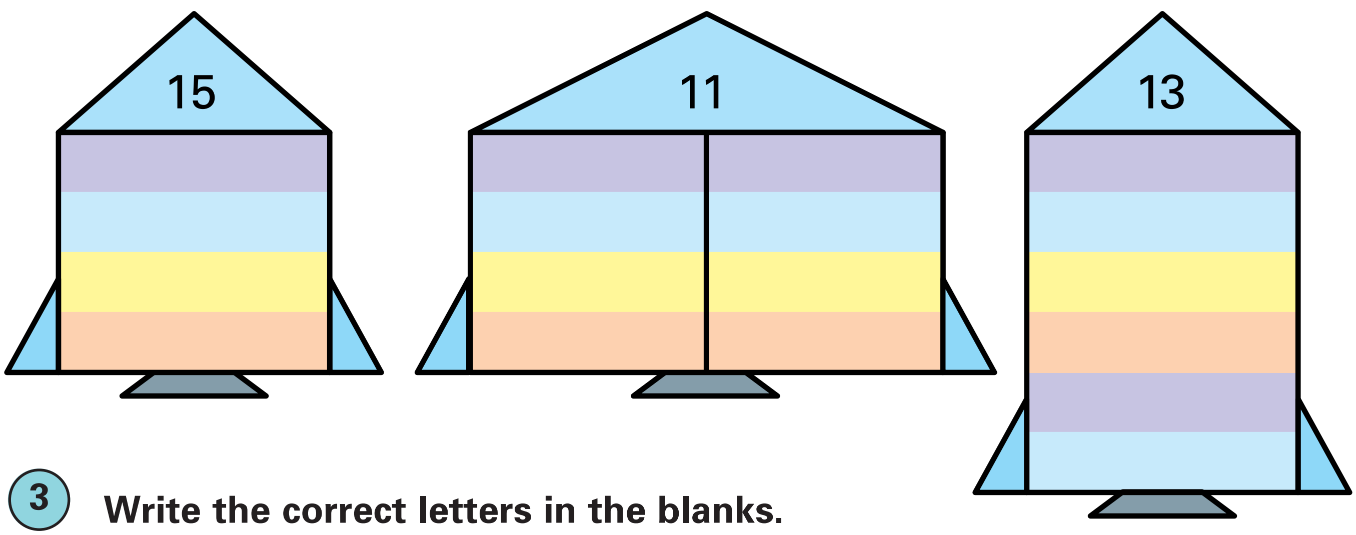
five thousand, six hundred eight
_____ = _____ thousands + ____ hundreds + __ tens + __ ones

nine thousand, four hundred twenty-seven
_____ = _____ thousands + ____ hundreds + __ tens + __ ones

two thousand, thirty-five
_____ = _____ thousands + ____ hundreds + __ tens + __ ones

six thousand, five hundred forty-nine
_____ = _____ thousands + ____ hundreds + __ tens + __ ones

2. **Write the addition facts having a sum of:**



3. **Write the correct letters in the blanks.**

____'____ ____   ____ ____   ____ ____   ____ ____ ____ ____

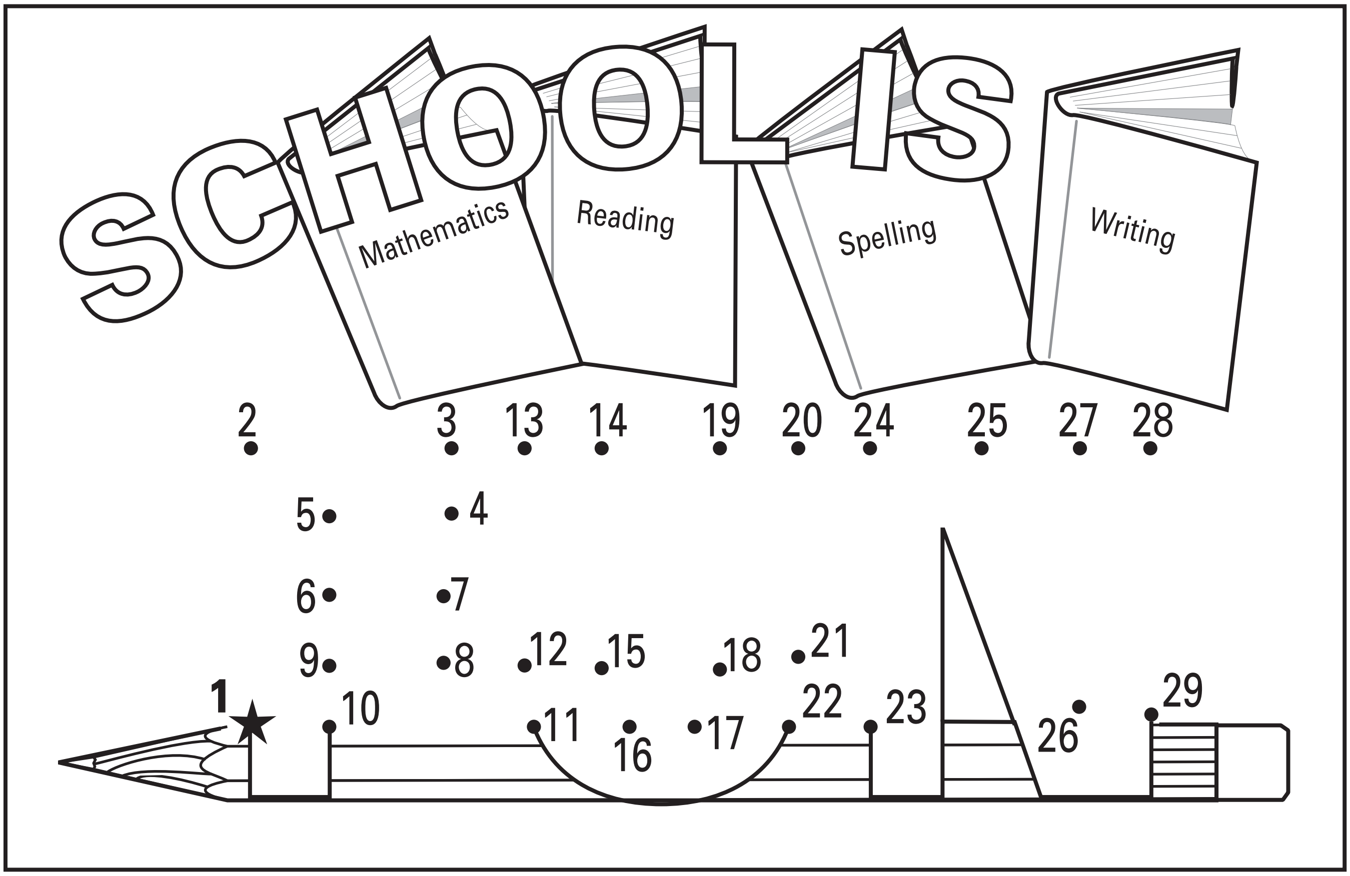
____ ____ ____ ____   ____ ____ ____ ____

5 th	O	16th	Y	13th	H	6 th	M	10th	S
19th	R	2 nd	L	18th	A	17th	E	3 rd	L
8 th	B	14th	I	1 st	I	4 th	D	12th	T
15th	S	7 th	Y	9 th	E	11th	T		

4 Find the sum.

13 + 27	58 + 38	36 + 45	64 + 18	27 + 36	45 + 27	39 + 58	29 + 23
42 + 48	14 + 57	36 + 28	29 + 66	35 + 36	57 + 18	68 + 25	79 + 12

5 Connect the dots.



6 Find the difference.

79 - 69	53 - 51	68 - 20	94 - 30	95 - 84	37 - 27	86 - 25	73 - 43
48 - 21	65 - 12	94 - 61	56 - 34	82 - 30	69 - 37	27 - 15	87 - 62

1 Match the numbers.

23rd	fortieth	483	three hundred twenty-seven
86th	seventy-fifth	609	six hundred ninety
40th	twenty-third	572	five hundred seventy-two
57th	eighty-sixth	327	four hundred eighty-three
31st	ninety-second	690	eight hundred thirty-eight
75th	fifty-seventh	838	six hundred nine
92nd	thirty-first	250	two hundred fifty

2 Write the numbers in expanded and standard form.

four thousand, three hundred twenty-five

4 thousands + 3 hundreds + 2 tens + 5 ones = _____ + ____ + ___ + ___ = _____

seven thousand, two hundred six

7 thousands + 2 hundreds + 0 tens + 6 ones = _____ + ____ + ___ + ___ = _____

one thousand, eight hundred forty-three

1 thousand + 8 hundreds + 4 tens + 3 ones = _____ + ____ + ___ + ___ = _____

eight thousand, seventy-one

8 thousands + 0 hundreds + 7 tens + 1 one = _____ + ____ + ___ + ___ = _____

five thousand, six hundred ninety-two

5 thousands + 6 hundreds + 9 tens + 2 ones = _____ + ____ + ___ + ___ = _____

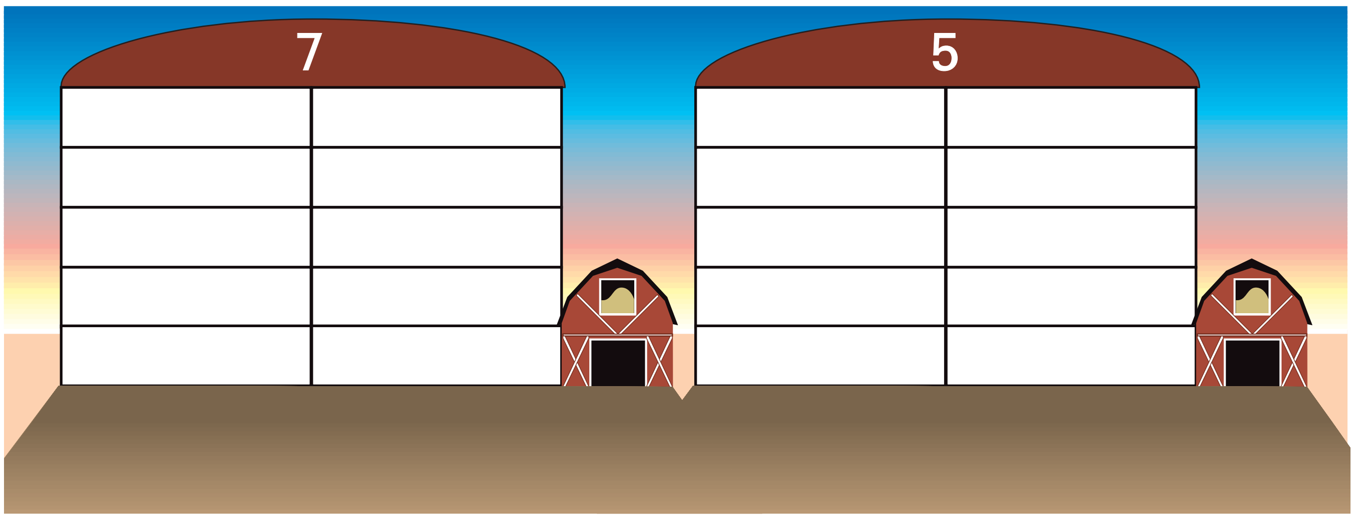
3 Find the sum.

84 + 90	98 + 11	80 + 23	94 + 75	73 + 56	61 + 97	82 + 45	53 + 51
92 + 50	62 + 47	81 + 34	86 + 73	72 + 34	67 + 60	94 + 31	81 + 66

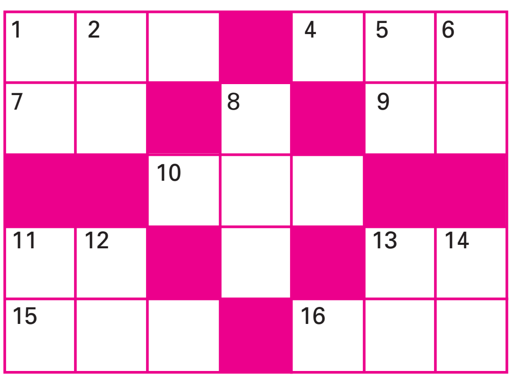
4 **Find the difference.**

89 - 85	76 - 36	78 - 56	58 - 17	63 - 22	94 - 24	18 - 15	45 - 23
96 - 73	89 - 30	47 - 31	99 - 49	74 - 61	82 - 42	69 - 41	57 - 50

5 **Write the subtraction facts having a difference of:**



6



Across

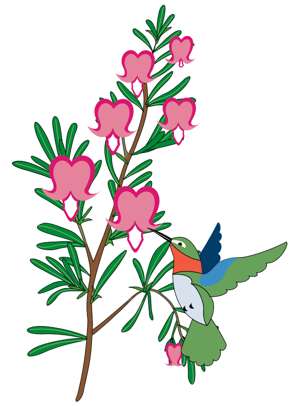
1. 74 + 83
4. 6 hundreds + 4 tens + 7 ones
7. 6 tens
9. 70 - 50
10. three hundred seven
11. 65 - 10
13. 2 tens + 4 ones
15. 98 + 46
16. eight hundred fifty-one

Down

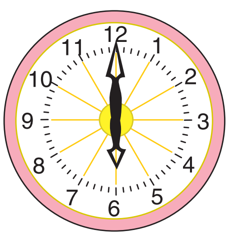
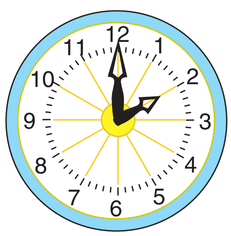
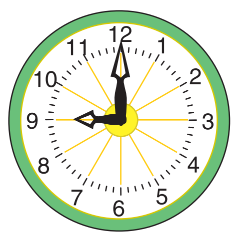
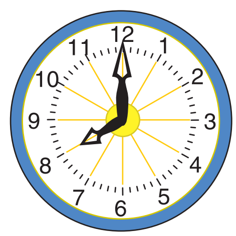
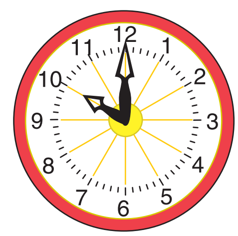
1. 59 - 43
2. 32 + 18
5. 4 tens + 2 ones
6. 7 tens
8. 5 hundreds
11. 5 tens + 1 one
12. 32 + 22
13. twenty-five
14. 87 - 46

1 Circle the closer ten.

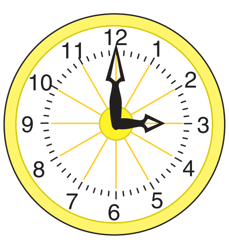
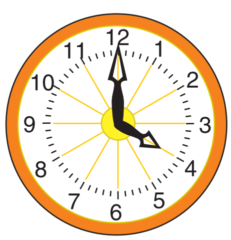
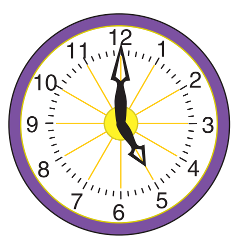
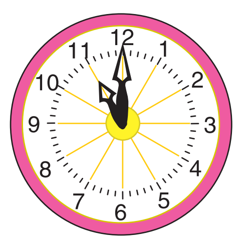
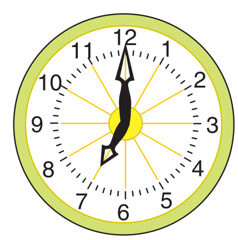
29	20	30	38	30	40
32	30	40	92	90	100
86	80	90	63	60	70
51	50	60	84	80	90
97	90	100	77	70	80
48	40	50	59	50	60
73	70	80	41	40	50
14	10	20	16	10	20



2 Write the correct time.

______ ______ ______ ______ ______

______ ______ ______ ______ ______

During the morning the time is (A.M. or P.M.)? _____

During the afternoon the time is (A.M. or P.M.)?_____

3 Find the sum.

81	67	86	96	45	53	42	98
+ 49	+ 89	+ 84	+ 47	+ 75	+ 68	+ 68	+ 76

73	57	76	28	97	89	87	53
+ 59	+ 93	+ 86	+ 95	+ 87	+ 23	+ 94	+ 77

4 Write the numbers in standard form.

two thousand, three hundred fifty-eight
2 thousands + 3 hundreds + 5 tens + 8 ones = _____

six thousand, seven hundred four
6 thousands + 7 hundreds + 0 tens + 4 ones = _____

nine thousand, one hundred ninety
9 thousands + 1 hundred + 9 tens + 0 ones = _____

five thousand, eight hundred twenty-seven
5 thousands + 8 hundreds + 2 tens + 7 ones = _____

three thousand, sixty-nine
3 thousands + 0 hundreds + 6 tens + 9 ones = _____

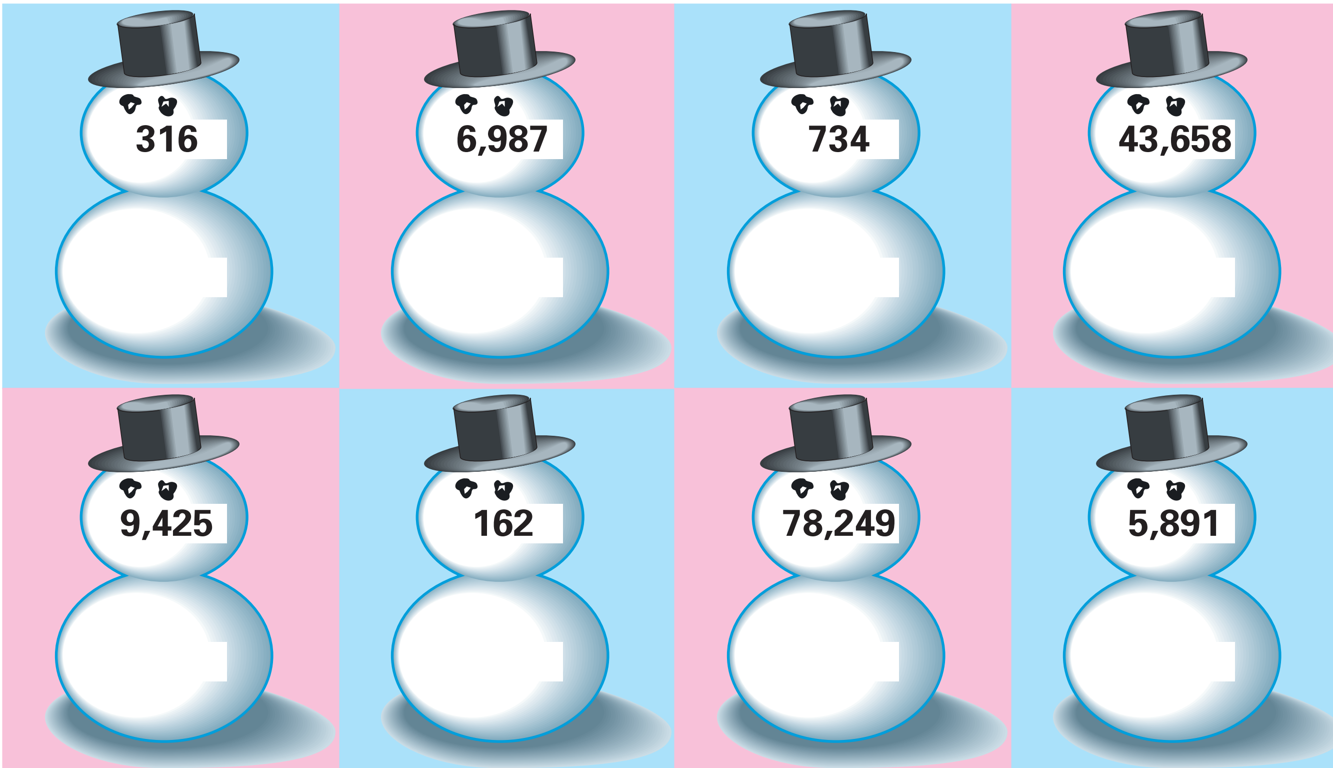
5 Match the numbers.

484	four hundred eighty	408	four hundred forty-four
480	eight hundred forty	880	eight hundred forty-eight
804	eight hundred eighty-four	440	four hundred eight
844	four hundred eighty-four	444	eight hundred eighty-eight
840	four hundred four	848	eight hundred eighty
448	eight hundred forty-four	488	eight hundred eight
404	eight hundred four	888	four hundred eighty-eight
884	four hundred forty-eight	808	four hundred forty

6 Find the difference.

87 - 17	49 - 48	28 - 14	87 - 54	37 - 12	28 - 22	59 - 43	95 - 42
73 - 13	86 - 85	76 - 36	94 - 53	58 - 17	19 - 16	69 - 12	98 - 10

1 **Round the numbers to the nearest 100.**



2 **Find the difference and check.**

5,612	4,361	7,250	8,504	9,830	6,945	6,527
- 5,174	- 284	- 6,178	- 7,165	- 4,564	- 1,378	- 4,189

3 **Write the Arabic numbers.**

DCLXXXIV _____

CCXLVI _____

CMXI _____

DCCCLXIII _____

CXXIX _____

CDXCVIII _____

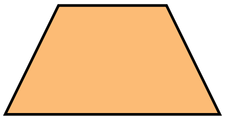
DCCLVII _____

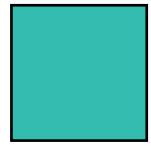
DLXXII _____

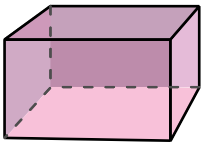
CCCXXXV _____

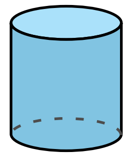
DCIII _____

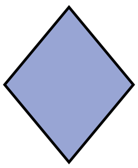
④ Write solid or plane.

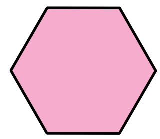
 ______________

 ______________

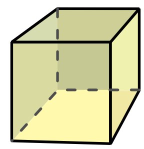
 ______________

 ______________

 ______________

 ______________

 ______________

 ______________

⑤ Find the product.

314	836	627	417	519	328	704	814	305
x 5	x 2	x 3	x 6	x 4	x 3	x 8	x 7	x 9

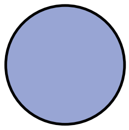
⑥ Write < or >.

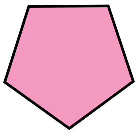
43,872	____	43,876	56,247	____	56,207	14,728	____	12,728
61,590	____	61,509	30,819	____	36,819	27,106	____	27,016
85,934	____	85,943	79,365	____	79,361	94,562	____	93,652

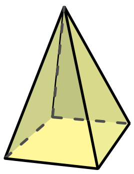
⑦ Write +, -, x, or ÷.

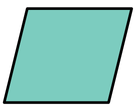
addends	_____	product	_____	subtrahend	_____
minuend	_____	sum	_____	quotient	_____
difference	_____	divisor	_____	multiplier	_____

1 Write solid or plane.

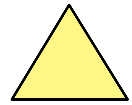
 ________

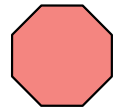
 ________

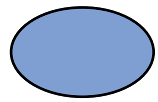
 ________

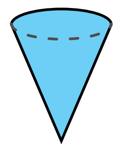
 ________

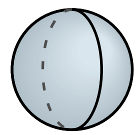
 ________

 ________

 ________

 ________

 ________

 ________

2 Write = or ≠.

$\frac{1}{2} \square \frac{5}{10}$	$\frac{2}{4} \square \frac{6}{8}$	$\frac{2}{3} \square \frac{4}{9}$	$\frac{2}{5} \square \frac{4}{10}$
$\frac{3}{7} \square \frac{2}{5}$	$\frac{3}{6} \square \frac{4}{8}$	$\frac{4}{6} \square \frac{6}{10}$	$\frac{6}{8} \square \frac{3}{5}$

In the fraction $\frac{3}{5}$, the denominator is a ____ and the numerator is a ____.

3 Find the product.

408 x 9	316 x 4	512 x 7	713 x 6	905 x 8	715 x 4	638 x 2	428 x 3	613 x 5

4 Round the numbers to the nearest 100.

234	5,156	617	34,925
9,481	572	52,793	6,848

5 Write < or >.

63,842 ____ 63,482	87,415 ____ 88,415	45,183 ____ 45,138
57,901 ____ 57,906	32,069 ____ 32,036	72,056 ____ 72,506

6 Find the difference.

7,901	9,821	5,620	7,535	7,374	5,642	4,956
- 6,813	- 6,547	- 3,182	- 7,169	- 4,289	- 2,387	- 1,268

7

If a book was copyrighted in MCMLXIX, what year was that?

If the big hand on the clock is at VI and the little hand is between IV and V, what time is it?

The students did the following number of push-ups on track and field day: Sam 26, Ross 44, Abel 107, Betty 79, and Cody 9. Together they did how many push-ups?

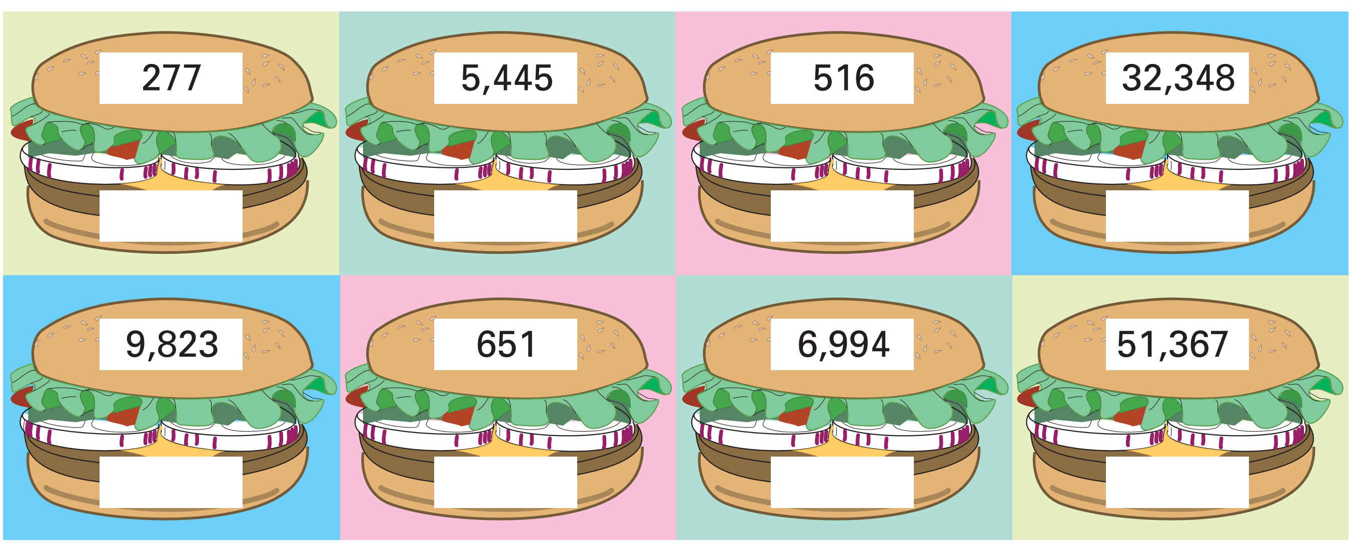
Elizabeth's teacher told her to take six thousand, seven hundred thirty-four away from nine thousand, nine hundred seventy-six. What should be her answer?

$$\frac{3 \times n}{3} = \frac{15}{3} \qquad \frac{\cancel{3}^{1} \times n}{\cancel{3}_{1}} = \frac{15}{3} \qquad n = \frac{15}{3} \qquad n = 5$$

1 **Solve the equations.**

$\frac{{}^{1}\cancel{4} \times n}{\cancel{4}_{1}} = \frac{24}{4}$ $n = \frac{24}{4}$ $n = 6$	$7 \times n = 56$	$6 \times n = 48$	$8 \times n = 32$
$5 \times n = 15$	$9 \times n = 18$	$3 \times n = 18$	$6 \times n = 30$

2 **Round the numbers to the nearest 100.**



3 **Find the difference and check.**

9,670	8,956	5,732	7,304	4,821	8,615	5,723
- 9,493	- 5,167	- 4,575	- 1,176	- 2,398	- 7,289	- 2,466

4 **Find the sum.**

22	71	39	54	15	34	10	75
59	43	29	13	24	62	51	24
56	58	92	35	40	45	48	11
77	92	83	93	6	70	31	52
+ 83	+ 38	+ 71	+ 56	+ 56	+ 47	+ 79	+ 33

5 **Write = or ≠. Write the terms.**

$\frac{2}{3} \square \frac{8}{24}$ ______ ______

$\frac{2}{5} \square \frac{6}{10}$ ______ ______

$\frac{4}{7} \square \frac{12}{21}$ ______ ______

$\frac{5}{6} \square \frac{15}{18}$ ______ ______

$\frac{3}{5} \square \frac{6}{12}$ ______ ______

$\frac{4}{6} \square \frac{6}{9}$ ______ ______

$\frac{5}{7} \square \frac{10}{14}$ ______ ______

$\frac{2}{8} \square \frac{3}{12}$ ______ ______

The ______________ tells how many parts are used. The ______________ tells into how many parts the whole is divided.

6 Ivan worked 8 hours a day for 24 days in the month. How many hours did he work in the month?

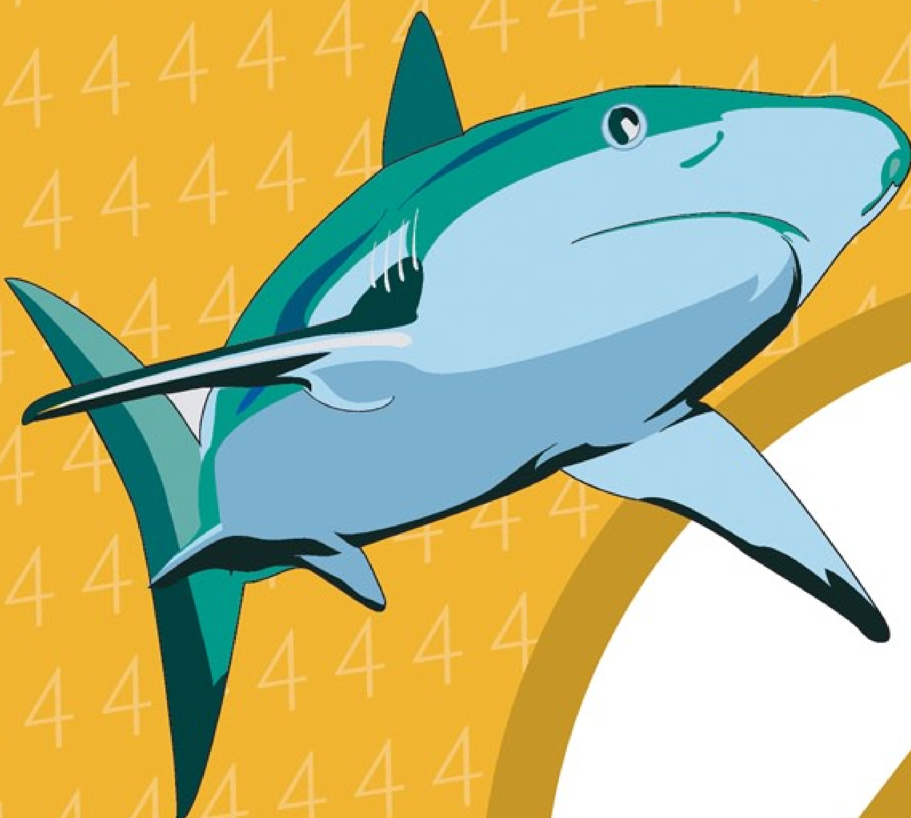
Jose earned $ 12.46 the first week throwing papers. On the second week he earned $ 9.52 and the third week $ 14.78. How much did he earn in the three weeks?

Norma had to be at play practice at 8:00 A.M. They were to practice for three hours. What time was play practice over? __________ She then went to a friends house to play for two hours. What time should she be home? __________

Horizons

Math

4



Addition Terms

Addition can be shown in two ways:

4	**Addend**	4	+	7	=	11
+ 7	**Addend**	**(Addend)**		**(Addend)**		**(Sum)**
11	**Sum**			***Horizontal Form***		
Vertical Form						

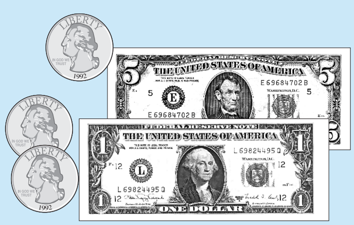
1 Find each sum and label.

a. 41 ________
+32 ________
____ ________

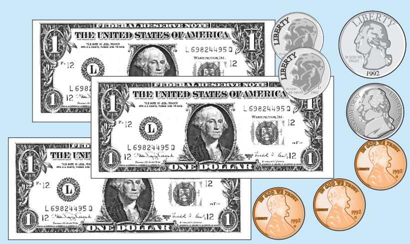
b. 75 ________
+23 ________
____ ________

c. 16 + 41 = ________
________ ________ ________

2 Write the value of each set.

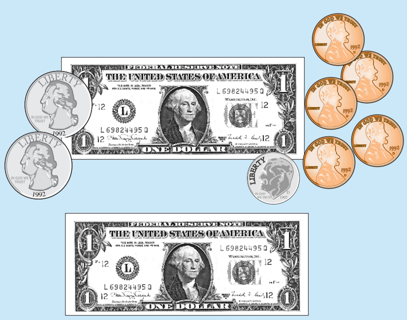


a.________

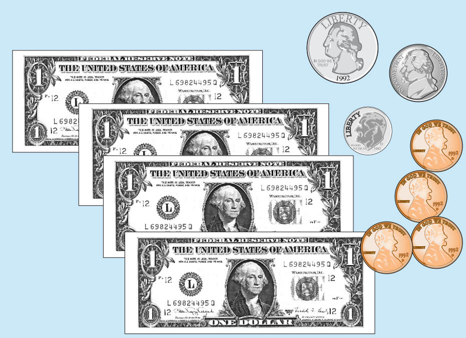


b.________

c.________



d.________

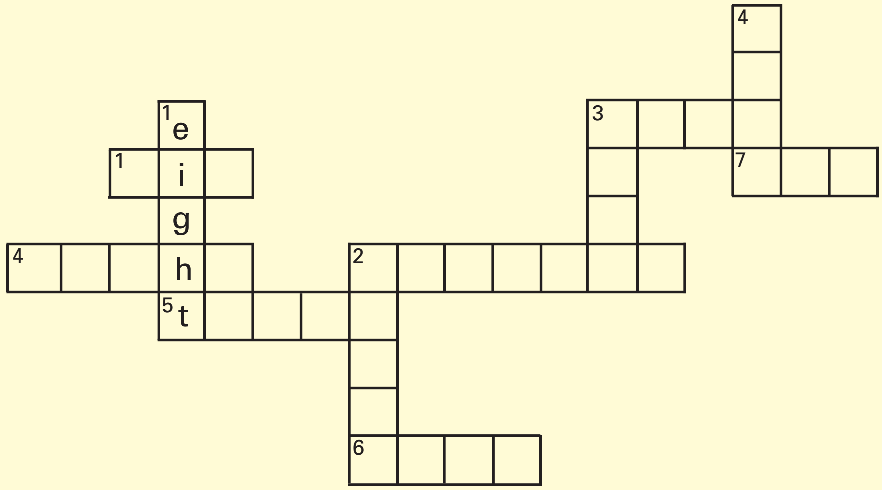


e.________

3 Write the largest number.

36907	71192	29317	92979	48103
________	________	________	________	________

3 Work the division problems and write your answers using written form.



ACROSS

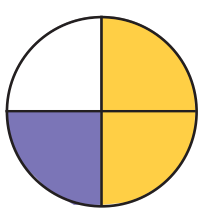
1. $9\overline{)54}$
2. $2\overline{)32}$
3. $3\overline{)12}$
4. $9\overline{)72}$
5. $5\overline{)15}$
6. $9\overline{)81}$
7. $8\overline{)8}$

DOWN

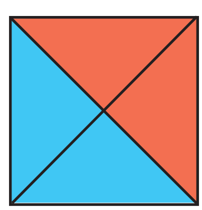
Example: 1. $3\overline{)24}$ = 8 = eight

2. $8\overline{)56}$
3. $2\overline{)10}$
4. $4\overline{)0}$

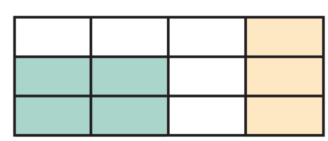
4 Write the fractional parts that are shaded. Find the sum.



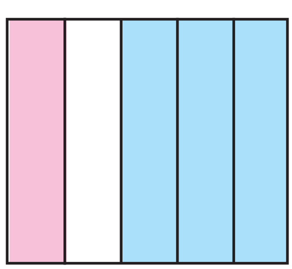
_______ + _______ =



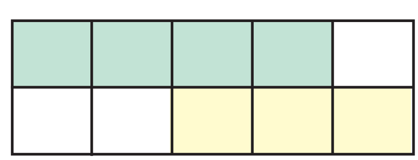
_______ + _______ =



_______ + _______ =



_______ + _______ =



_______ + _______ =

5 Find the Products

x	5	6
4		
5		
6		

x	3	4
4		
5		
6		

x	7	8
4		
5		
6		

6 Write <, > or =.

54,499 ___ 54,944 12,000 ___ 12 thousand 912 billion ___ 912,000,000

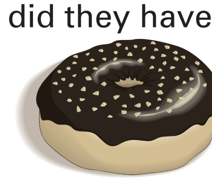
34,270 ___ 34,720 124,000 ___ 124,001 43 million ___ 43,000,000

6,789 ___ 6,800 537 billion ___ 537,000,000 14 thousand ___ 1,014

7 Dawn is in Mr. Carter's fourth grade class. She read the problems below and found a solution. Look at the question and Dawn's answer. If you think she understood the question, write yes beside her answer. If you think she did not understand the question, write no beside her answer.

Sam had 18 donuts to bring to the carnival. Paul had two dozen donuts to bring to the carnival. When they combined their donuts, how many did they have?

18 + 24 = 42 donuts ____________________



Christi, Julie, and Pauline took a ride on the Magic Skyrocket. The tickets were $2.50 a piece. If the girls gave the cashier $10.00, how much was their change?

$2.50 + $2.50 + $2.50 = $7.50 _______________

Steve was great at ring toss. He threw a total of 57 rings. 21 of his rings made it around a pop bottle. How many of his tosses did not make it around a pop bottle?

57 – 21 = 36 ___________________

Cotton candy costs $1.00, popcorn costs $0.75, soft drinks are $1.00, hot dogs are $1.75, and chips are $0.75. If Pam has $5.00, can she buy one of everything?

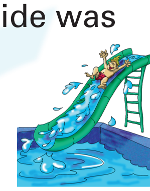
$1.00 + $0.75 + $1.00 + $1.75 + $0.75 = $5.25

$5.00 – $5.25 = you can not subtract $5.25 from $5.00.

She does not have enough. ______________

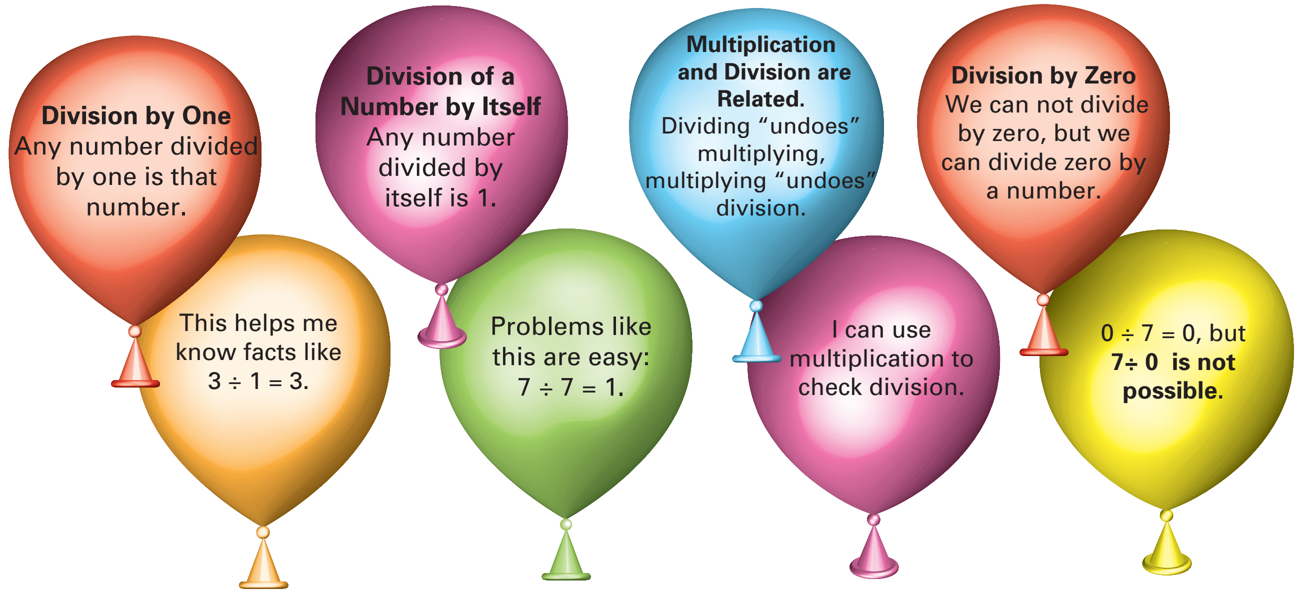
Five of the boys wanted to go down the waterslide. If the cost of the ride was $2.00 per person, how much would it cost the boys to ride?

$5.00 – $2.00 = $3.00______________



Division Properties

Apply the division properties from the last lesson to understand basic division facts.



1 Solve the problems by applying the division properties.

$42 \div 7 =$ ______ , so ______ $\times 7 = 42$ $48 \div 8 =$ ______ , so ______ $\times 8 = 48$

$15 \div 3 =$ ______ , so ______ $\times 3 = 15$ $30 \div 6 =$ ______ , so ______ $\times 6 = 30$

$8 \div 8 =$ ______ $8 \div 1 =$ ______ $12 \div 12 =$ ______ $12 \div 1 =$ ______ $0 \div 4 =$ ______

$5 \div 5 =$ ______ $5 \div 1 =$ ______ $10 \div 10 =$ ______ $10 \div 1 =$ ______ $0 \div 9 =$ ______

What division problem is impossible? ________________________________

2 Find the quotient. Label the first problem using the terms divisor, dividend, and quotient.

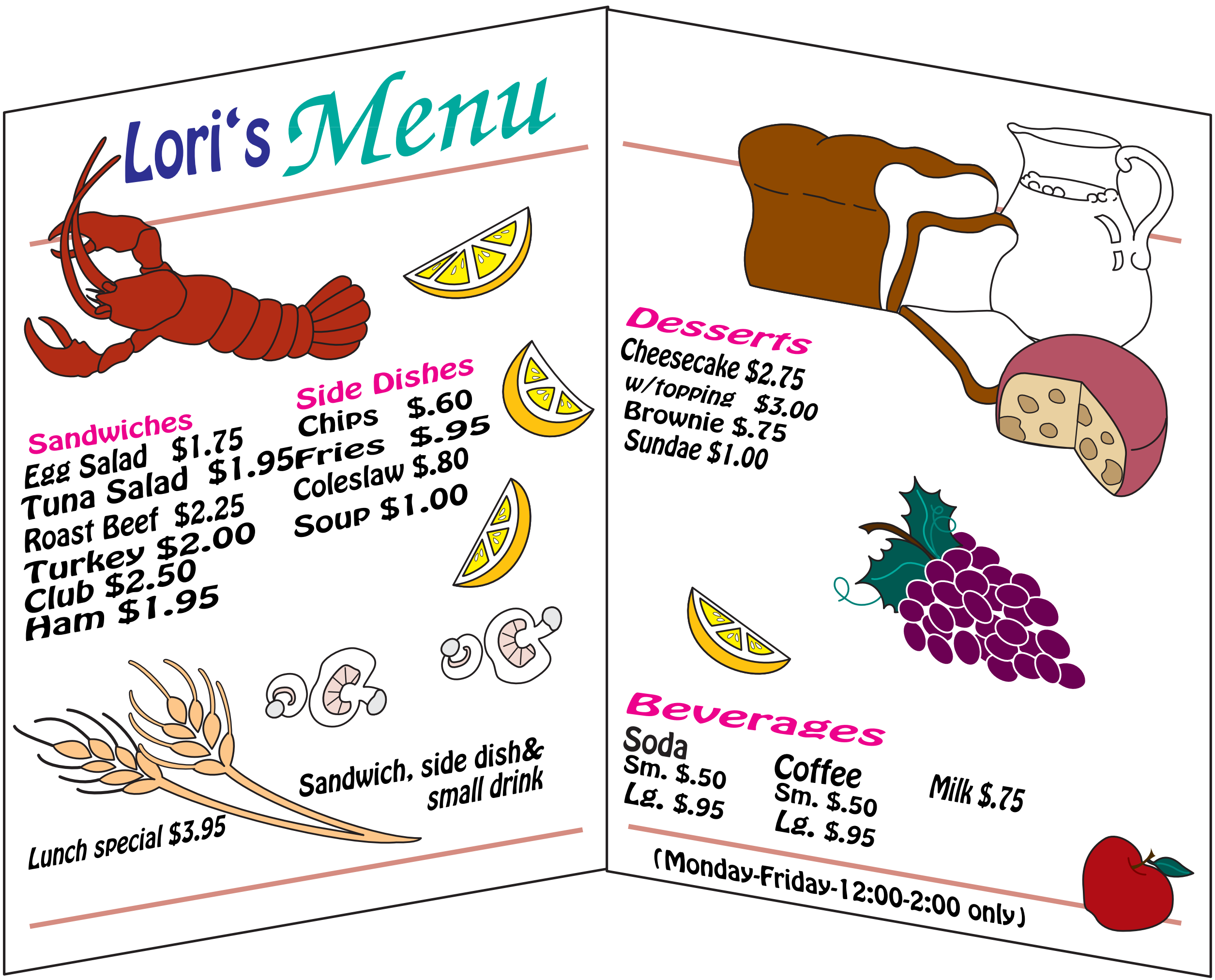
______ 6)18 ______ 9)81 9)9 7)21 1)2

3)15 2)18 3)27 9)36 8)72

6)54 8)24 2)2 9)45 9)63

Problem Solving

Real life involves having to use money in everyday situations like ordering food at a restaurant. Data is gathered from a menu and then used to calculate the amount of money you are spending.

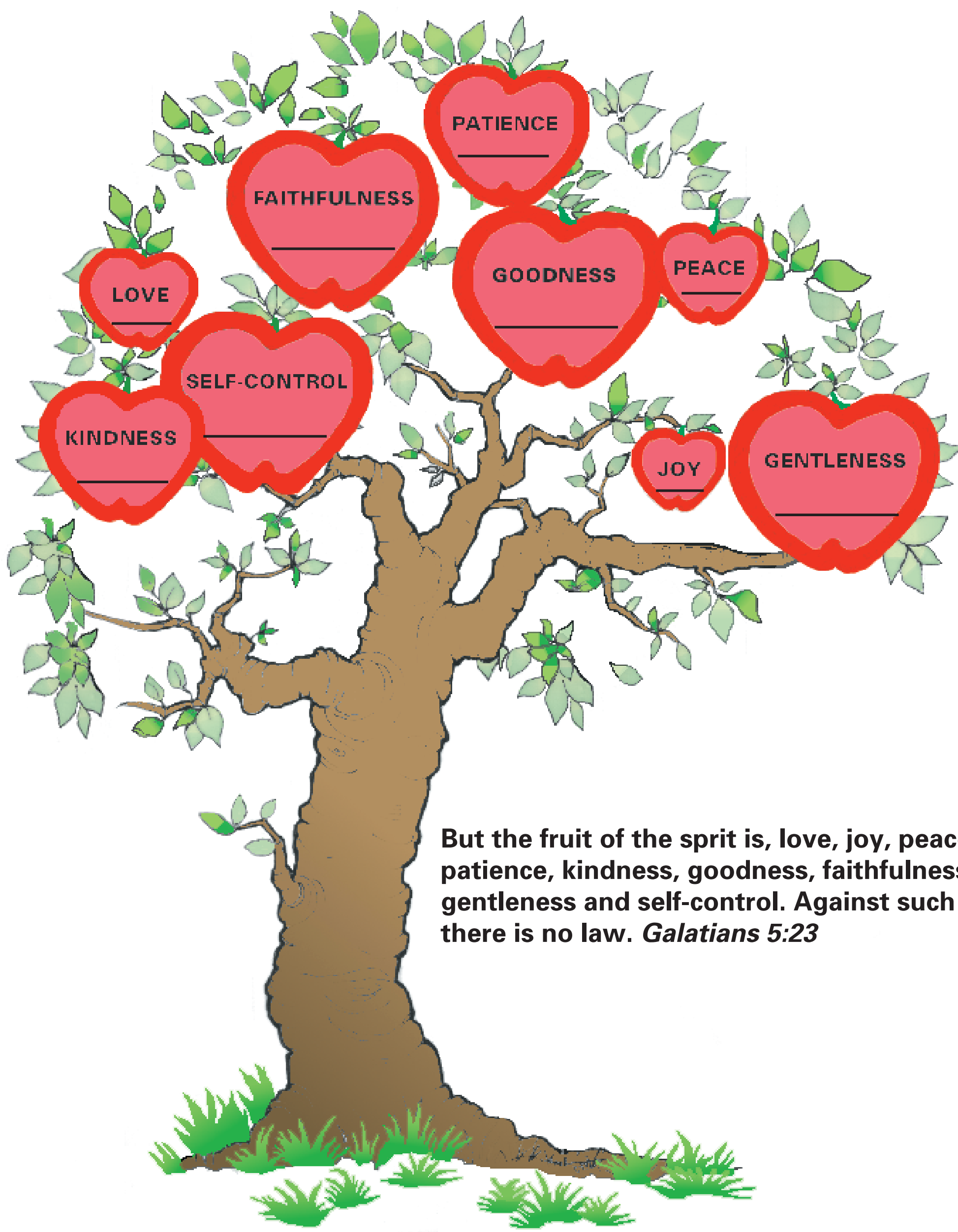


Sally and four friends are having the lunch special. How much money will the 5 meals cost?

$3.95	(Price of special)
x 5	(Number of meals ordered)
$19.75	(Price of meals)

Olivia's Decorating Den offered a combination special. You could purchase a gallon of paint in either white, beige, blue, or green, and 3 rolls of coordinating wallpaper—striped or flowered—for $35.00. How many different paint and wallpaper combinations can be made?

2 Count the number of letters in each word in the picture below. If the number of letters in the word is a prime number, write P for PRIME on the answer line provided below the word. If the number of letters in the word is composite, write C for COMPOSITE on the answer line provided below the word.



But the fruit of the sprit is, love, joy, peace, patience, kindness, goodness, faithfulness, gentleness and self-control. Against such things there is no law. ***Galatians 5:23***

Telling Time

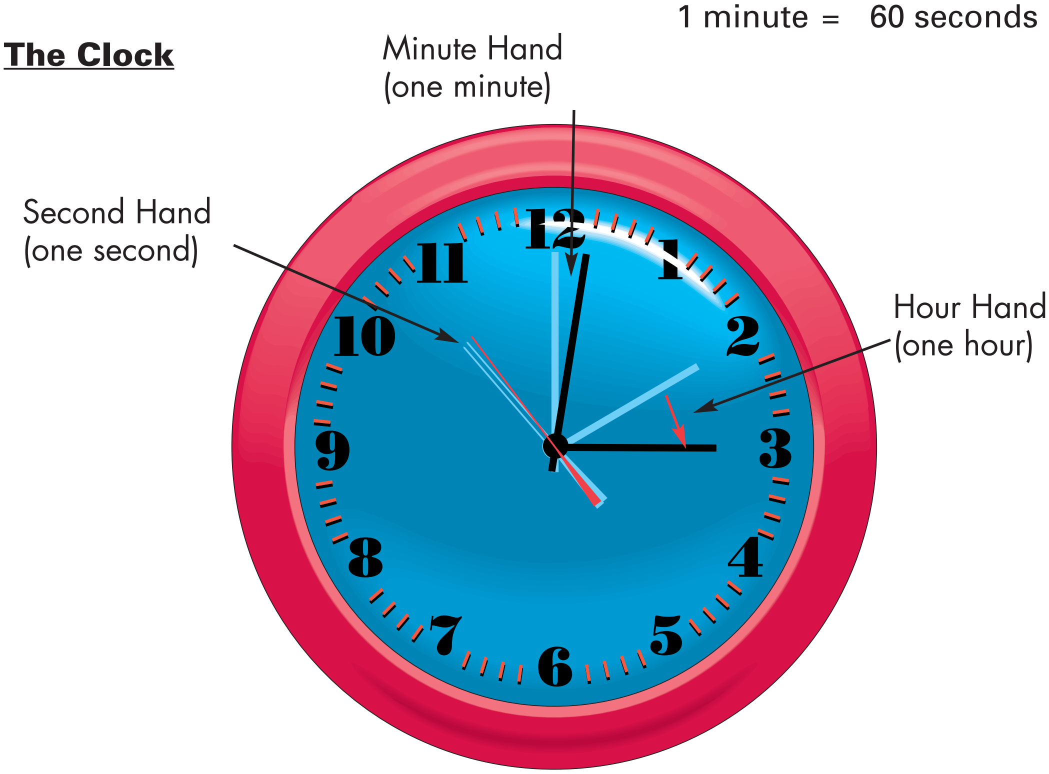
Sandra was assigned to make a class presentation on telling time. She made a poster to show how we measure time using a day and smaller units.

Telling Time

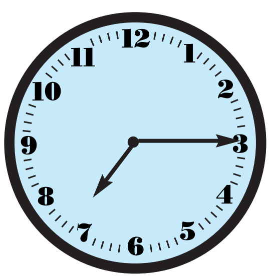
Units of Time

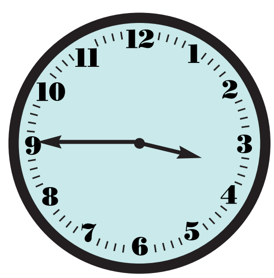
1 day	=	24 hours
1 hour	=	60 minutes
1 minute	=	60 seconds

The Clock



A given time may be read and stated in several different ways. The following are examples of times which may be stated different ways.

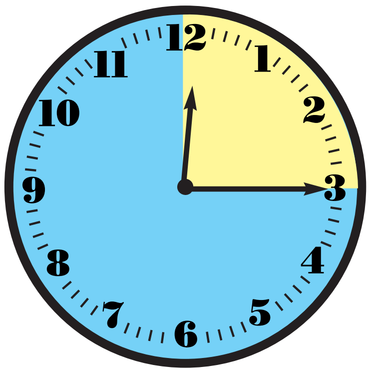




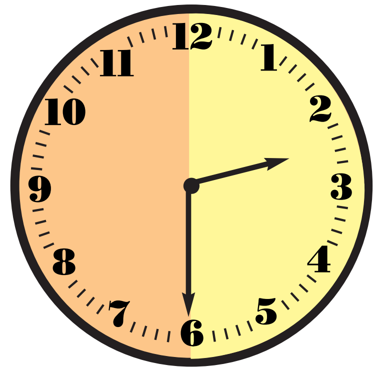
Read:

7:15	3:45	9:24
Seven fifteen or 15 minutes after 7 or a quarter after 7	Three forty-five or 45 minutes after 3 or a quarter until 4	Nine twenty-four or 24 minutes after 9

The reason time is often stated as "a quarter after," "a quarter before," or "half after" is because the clock face is a circle and minutes may be viewed as fractions of an hour. When the clock face is viewed as a fractional representation of minutes, 15 after is a quarter of the whole clock. 30 minutes is viewed as half of the clock face; half of an hour. Look at the diagram below.



12:15 or a quarter after 12

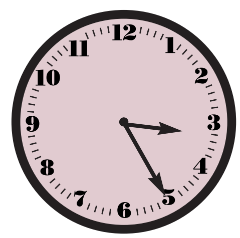


2:30 or half past 2

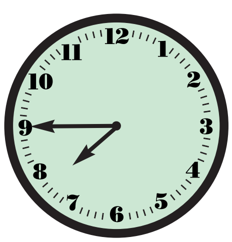
1. Write in the correct time.

______

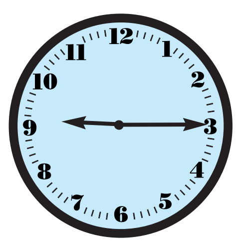
______



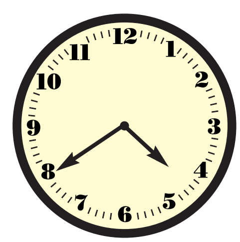
______



______



______



______

2. Solve.

$3 + n = 5 + (2 \times 6)$

$7 + n = 8 + (3 \times 1)$

$n + 4 = 12 - (3 \times 2)$

3 Write in expanded form.

Three hundred thousand, forty-five =

Twenty-four million =

Sixty-five =

Ninety-eight hundred thousand =

Two billion =

4 Find the difference.

92 – 5 =	81 – 7 =	36 – 4 =
90 – 19 =	76 – 12 =	27 – 22 =

5 Multiply.

481	763	371	281	590
x 23	x 15	x 31	x 28	x 79

6 Fill in the blanks.

A ______________________ is 100 years.

_______________ means Before Christ.

A ______________________ is 10 years.

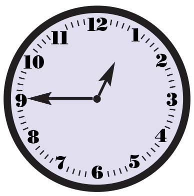
___________ means *anno Domini* or *in the year of our Lord.*

A ______________________ is 1,000 years.

WORD BANK:
millennium
century
decade
B.C.
A.D.

Telling Time

Kimberly went to bed at 12:45 after watching the late movie. Samantha ate an enchilada and taco dinner at 12:45.

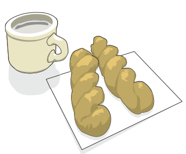


12:45 P.M.

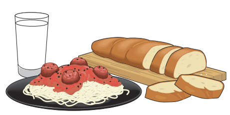
12:45 A.M.

How do we know what time of day these events occurred? Did Kimberly go to bed at 12:45 in the afternoon? Did Samantha eat at 12:45 at night? Probably not, but how could we know for sure? It is simple. **Times from 12:00 midnight up to noon are labeled A.M. Times from 12:00 noon up to midnight are labeled P.M.**

For example, we have labeled each of the following events and times as either A.M. or P.M.



Breakfast
7:15 A.M.



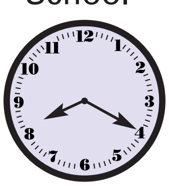
Dinner
6:30 P.M.

Sunday School
9:30 A.M.

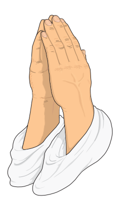
Skydiving Lessons
4:30 P.M.

1. Write the time and label A.M. or P.M.

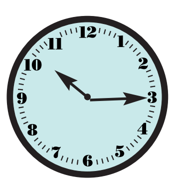
Starting School



Time: ________



Going to Bed

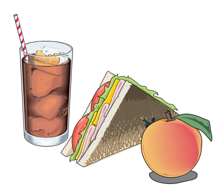


Time: ________

Ending the school day

2:50

Time: ________



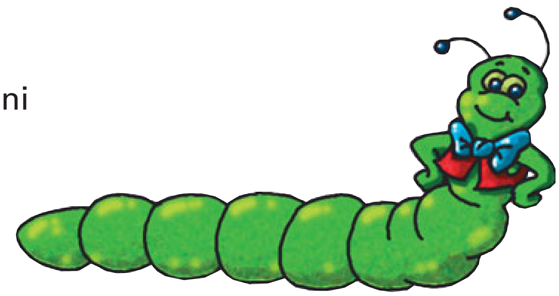
Eating an early lunch

11:27

Time: ________

2 Match.

10 years	before Christ
100 years	millennium
B.C.	decade
A.D.	anno Domini
1,000 years	century



3 Order from largest to smallest.

6,729	6,808	6,333	6,395
________	________	________	________
9,867	9,291	9,365	9,567
________	________	________	________

4 Find the difference.

$\begin{array}{r} 754 \\ -\ 297 \\ \hline \end{array}$ $\begin{array}{r} 291 \\ -\ 123 \\ \hline \end{array}$ $\begin{array}{r} 170 \\ -\ 89 \\ \hline \end{array}$ $\begin{array}{r} 182 \\ -\ 125 \\ \hline \end{array}$ $\begin{array}{r} 395 \\ -\ 106 \\ \hline \end{array}$ $\begin{array}{r} 567 \\ -\ 307 \\ \hline \end{array}$

5 Solve.

$5 \times n = 45$ $9 \times n = 36$ $2 \times n = 18$ $4 \times n = 32$

6 Solve.

$9\overline{)56}$ $7\overline{)4}$ $6\overline{)9}$ $3\overline{)20}$ $7\overline{)46}$

Century

What is a century? A century is a time period of 100 years. We now live in the 21st Century. Look at the chart below. This chart shows all the dates and centuries up to the present.

1	**A.D.**	**to**	**100 A.D.**	**-**	**1st century**
101	**A.D.**	**to**	**200 A.D.**	**-**	**2nd century**
201	**A.D.**	**to**	**300 A.D.**	**-**	**3rd century**
301	**A.D.**	**to**	**400 A.D.**	**-**	**4th century**
401	**A.D.**	**to**	**500 A.D.**	**-**	**5th century**
501	**A.D.**	**to**	**600 A.D.**	**-**	**6th century**
	↓				↓
1601	**A.D.**	**to**	**1700 A.D.**	**-**	**17th century**
1701	**A.D.**	**to**	**1800 A.D.**	**-**	**18th century**
1801	**A.D.**	**to**	**1900 A.D.**	**-**	**19th century**
1901	**A.D.**	**to**	**2000 A.D.**	**-**	**20th century**
2001	**A.D.**	**to**	**2100 A.D.**	**-**	**21st century**

If you look closely you will notice that the beginning digits of the year, 1996, and the beginning digits of the century, 20th century are one number off. This is an easy way to remember what century a year is in. Look at the first two digits of the year and then add one. For example: 1898 is in the 19th century, 1768 is in the 18th century, and 2012 is in the 21st century.

1 Tell the century for each year.

1594 = ____________ 1437 = ____________

1889 = ____________ 1776 = ____________

2001 = ____________ 987 = ____________

Horizons

Math

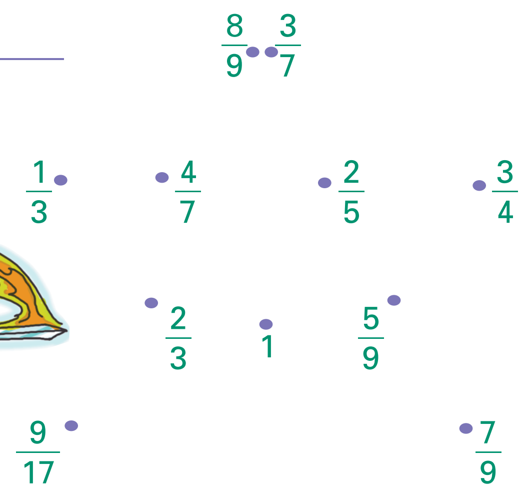
5

2 Match.

1. $7 + (1 + 4) = (7 + 1) + 4$	a. Order Property of Addition
2. $3 + 5 = 8$ so $5 + 3 = 8$	b. Grouping Property of Addition
3. $3 + 0 = 3$	c. Zero Property of Addition

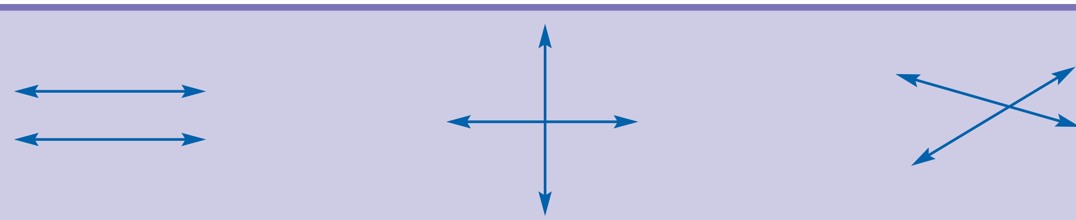
3 Add. Be sure and write the fractions in lowest terms. Connect the answers in order of the problems to uncover the hidden picture.

1. $\frac{1}{7} + \frac{2}{7} =$ ______
2. $\frac{1}{10} + \frac{3}{10} =$ ______
3. $\frac{2}{8} + \frac{4}{8} =$ ______
4. $\frac{2}{9} + \frac{3}{9} =$ ______
5. $\frac{4}{9} + \frac{3}{9} =$ ______
6. $\frac{4}{5} + \frac{1}{5} =$ ______
7. $\frac{2}{17} + \frac{7}{17} =$ ______
8. $\frac{1}{3} + \frac{1}{3} =$ ______
9. $\frac{3}{15} + \frac{2}{15} =$ ______
10. $\frac{3}{7} + \frac{1}{7} =$ ______
11. $\frac{6}{9} + \frac{2}{9} =$ ______



Those who are wise will shine like the brightness of the heavens, and those who lead many to righteousness, like the stars for ever and ever. Daniel 12:3

4 Define using the following words: parallel, intersecting, perpendicular.



______ ______ ______

5 Arrange the numbers in the spaces below to make the largest number possible.

1, 7, 3, 0, 5, 7 — _ _ _ _ . _ _

3, 3, 5, 8, 1, 0, 2 — _ _ _ _ _ . _ _

7, 9, 7, 9, 2, 1 — _ _ _ _ _ . _

6 Add each fraction and write it in lowest terms. Find the letter in the roof that matches the sum, and write it in the box in the window. The message will complete the statement; **A house ....**

$K = \frac{5}{8}$

$O = \frac{1}{3}$ $B = \frac{1}{2}$ $T = \frac{3}{4}$

$L = \frac{2}{3}$ $C = \frac{7}{9}$ $U = 1$ $N = \frac{9}{14}$ $I = \frac{5}{6}$ $R = \frac{17}{30}$

$\frac{2}{6} + \frac{1}{6} =$ ☐ $\frac{5}{11} + \frac{6}{11} =$ ☐ $\frac{9}{12} + \frac{1}{12} =$ ☐ $\frac{6}{18} + \frac{6}{18} =$ ☐

$\frac{4}{8} + \frac{2}{8} =$ ☐ $\frac{1}{12} + \frac{3}{12} =$ ☐ $\frac{4}{14} + \frac{5}{14} =$ ☐ $\frac{5}{30} + \frac{12}{30} =$ ☐

$\frac{3}{15} + \frac{2}{15} =$ ☐ $\frac{6}{9} + \frac{1}{9} =$ ☐ $\frac{8}{16} + \frac{2}{16} =$ ☐

Matthew 7:24-25: Everyone who listens to these words of mine and acts on them will be like a wise man who _ _ _ _ _ his house _ _ _ _ _ _ . The rain fell, the floods came, and the winds flew and buffeted the house. But it did not collapse; it had been set solidly on rock.

hundreds	tens	ones
2	4	3

hundreds	tens	ones
5	7	1

hundreds	tens	ones
	3	4

hundreds	tens	ones
		8

2 Match each standard number with the written or expanded form of that number.

296	Two thousand, nine hundred sixty
2,096	Two hundred ninety-six
296,000	200,000 + 900 + 60
2,960	Two thousand, ninety-six
200,960	200,000 + 90,000 + 6,000

3 Find each number written in standard form in the puzzle below.

Five hundred thousand, forty-five
One billion, six hundred thousand
Eleven million, four hundred seventy-five thousand, nine hundred
Two thousand fourteen

1	0	0	0	6	0	0	0	0	0
1	5	3	1	0	5	7	9	2	4
4	7	6	3	8	4	5	1	3	1
7	4	0	4	8	9	9	1	4	0
5	0	0	0	4	5	0	4	7	9
9	3	5	9	8	2	1	8	2	5
0	4	0	0	7	2	5	5	3	7
0	6	5	9	8	0	0	9	6	8
9	8	8	1	8	3	2	0	1	4
6	5	2	3	5	6	1	0	4	9

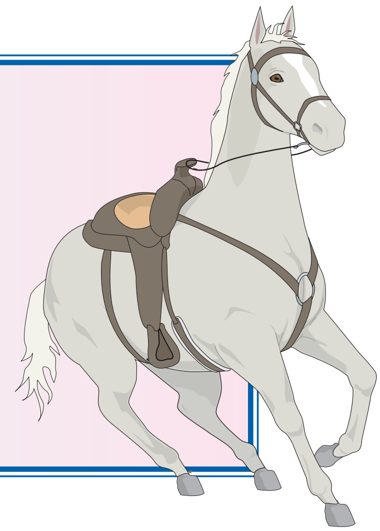
5 Solve.

3 gal = _______ qt

4 pt = _______ qt

4 c = _______ qt

$\frac{1}{2}$ pt = _______ c



6 Find the missing addends.

?	10	?	98	?	50
+ 8	+ ?	+ 45	+ ?	+ 5	+ ?
13	25	68	118	18	95

7 Find the products.

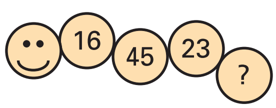
3^2 $\qquad$ 4^2 $\qquad$ 5^2

2^3 $\qquad$ 10^2

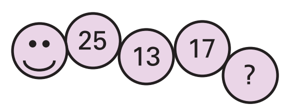
3 Beside each number write prime or composite. If the number is composite, find the prime factors. The first one has been done for you.

1.	12	composite	2, 2, 3
2.	3		
3.	9		
4.	25		
5.	24		
6.	17		
7.	40		
8.	55		

4 Find the missing addends.



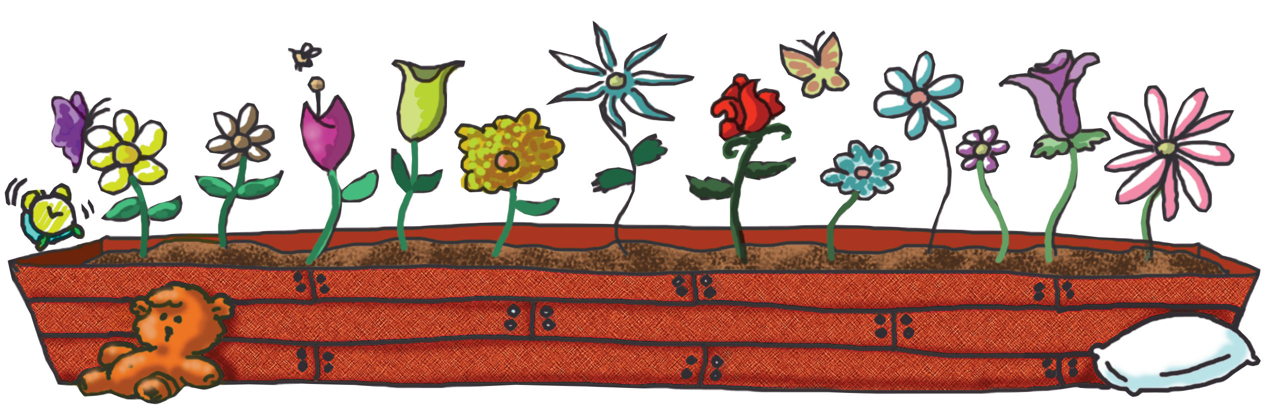
= 96



= 80

5 Find the sum.

$$\begin{array}{r} 13{,}489 \\ +\ 12{,}603 \\ \hline \end{array} \qquad \begin{array}{r} 23{,}709 \\ +\ 35{,}931 \\ \hline \end{array} \qquad \begin{array}{r} 15{,}290 \\ +\ 48{,}981 \\ \hline \end{array} \qquad \begin{array}{r} 39{,}131 \\ +\ 3{,}084 \\ \hline \end{array}$$



5 Find the product.

$$\begin{array}{r} 542 \\ \times \quad 5 \\ \hline \end{array} \qquad \begin{array}{r} 903 \\ \times \quad 8 \\ \hline \end{array} \qquad \begin{array}{r} 284 \\ \times \quad 9 \\ \hline \end{array}$$

$$\begin{array}{r} 731 \\ \times \quad 2 \\ \hline \end{array} \qquad \begin{array}{r} 732 \\ \times \quad 3 \\ \hline \end{array}$$

6 Answer the questions about the number below.

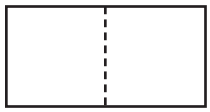
365,891,027,000

1. Write the number in words.____

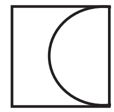
____

2. The seven is in the ____________________ place.
3. What number is in the ten billions' place? _______________
4. What number is in the hundred millions' place? _______________
5. What number is in the ten thousands' place? _______________

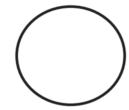
Symmetry



Fold a piece of paper in half.

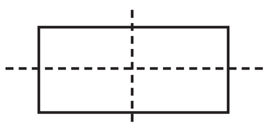


Cut out a design. Do not cut down the fold line.

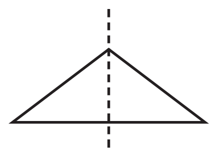


Unfold the cut out design.

You have just made a symmetric figure. A symmetric figure can be folded so that both sides match. The fold line is called the line of symmetry. Some shapes have several lines of symmetry, and some shapes have no lines of symmetry.



two lines of symmetry



one line of symmetry

no lines of symmetry

1 Draw the lines of symmetry for each object.

Many companies use one or more lines of symmetry when creating their logos. Create a logo for yourself using at least one line of symmetry. You might want to use letters in your name or draw a design of an activity that you enjoy.

2 There are examples of parallel, perpendicular, and intersecting lines all around you. Below each description, write three examples that you can find in your room.

Parallel	**Perpendicular**	**Intersecting**
______________	______________	______________
______________	______________	______________
______________	______________	______________

3. The table below is missing information. Fill in the missing facts. If you need help, refer to Lesson 71.

Geometry Terms	Geometry in Pictures	Geometry in Symbols	Geometry in words
Point	• K	K	
Line	D E		Line DE
	S T	$\overline{ST}$	Line Segment ST
Ray		$\overrightarrow{XY}$	Ray XY Always name the endpoint first.
Plane	R	Plane R	

4. Match.

B.C.	1,000 years
A.D.	Before Christ
decade	100 years
century	Anno Domini (in the year of our Lord)
millennium	10 years

5. Divide.

$8\overline{)59}$ $6\overline{)38}$ $9\overline{)88}$ $4\overline{)39}$ $5\overline{)17}$

6. In the puzzle there are at least 20 numbers that when rounded become 100. Can you find them all? You may find numbers horizontally and vertically, but not diagonally. Circle the numbers in the puzzle and write them on the lines provided. Some numbers may appear more than once.

1	2	1	9	9
3	8	4	2	1
8	7	9	0	3
1	1	1	9	3
0	0	0	8	7

_____ _____ _____ _____
_____ _____ _____ _____
_____ _____ _____ _____
_____ _____ _____ _____
_____ _____ _____ _____

7. Write subtraction problems with the answers given. There are many possible answers. The first one has been done for you.

$\begin{array}{r} 10 \\ -\ 2 \\ \hline 8 \end{array}$ $\begin{array}{r} \\ -\ \_\_ \\ \hline 7 \end{array}$ $\begin{array}{r} \\ -\ \_\_ \\ \hline 3 \end{array}$ $\begin{array}{r} \\ -\ \_\_ \\ \hline 4 \end{array}$ $\begin{array}{r} \\ -\ \_\_ \\ \hline 1 \end{array}$ $\begin{array}{r} \\ -\ \_\_ \\ \hline 6 \end{array}$

Congruent Segments

Congruent Segments, Angles, and Polygons

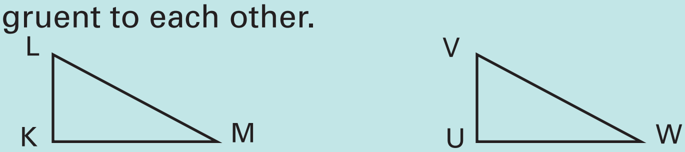
Two segments that have the same length are congruent to each other. The symbol to express congruency is ≅ .

The line segment AB is congruent to line segment CD. We write $\overline{AB} \cong \overline{CD}$.

Two angles that have the same measure are congruent to each other.

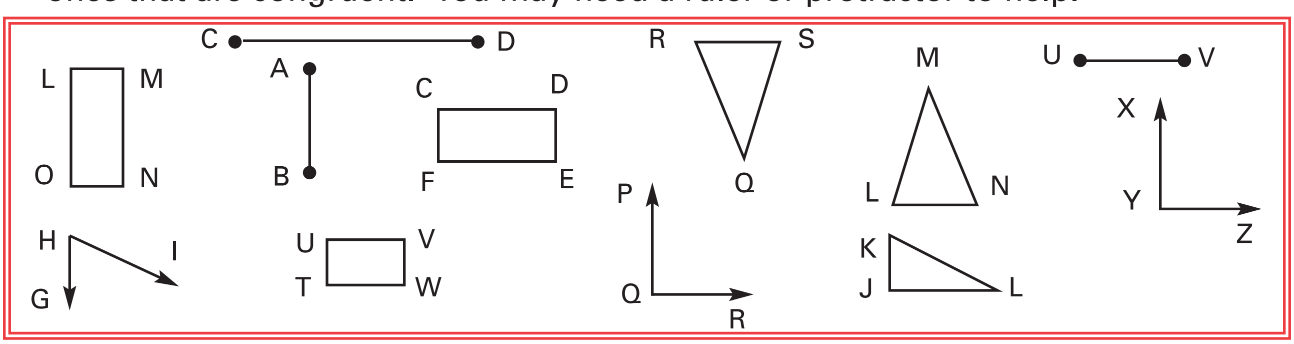
Angle ABC is congruent to angle XYZ. We write: $\angle ABC \cong \angle XYZ$

Two polygons that have congruent matching angles and congruent matching sides are congruent to each other.



Triangle KLM is congruent to triangle UVW. We write: $\triangle KLM \cong \triangle UVW$

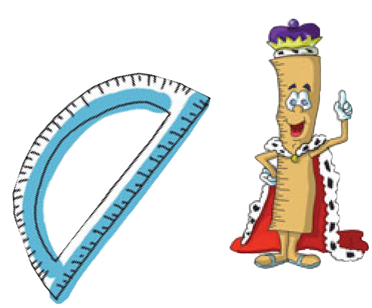
1 Look at the line segments, angles, and polygons in the data bank and identify the ones that are congruent. You may need a ruler or protractor to help.



Name one pair of congruent line segments.

Name one pair of congruent angles.

Name two pair of congruent polygons.



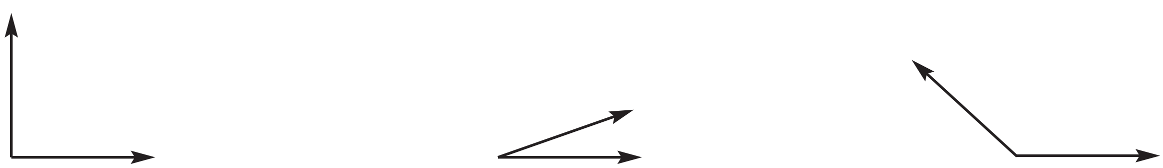
2 Is the dotted line a line of symmetry? Write yes or no.

_______ _______ _______ _______

How many lines of symmetry does each letter have?

A	B	C	E	H	X
___	___	___	___	___	___

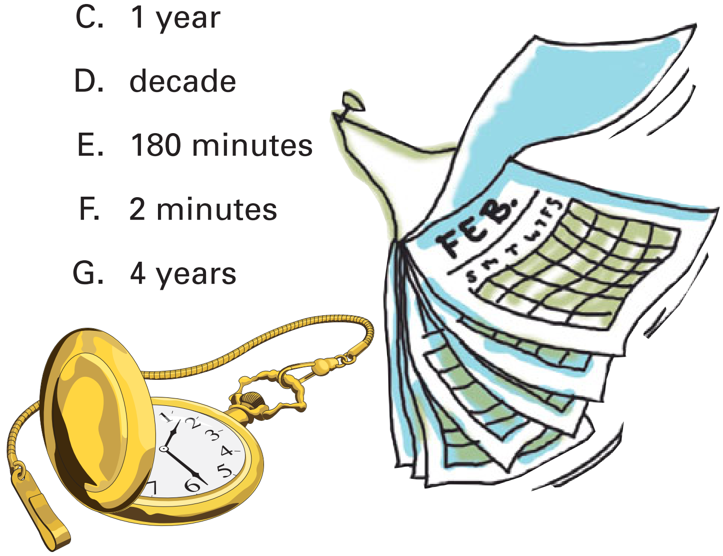
3 Write obtuse, acute or right angle.



_______ _______ _______

4 Match.

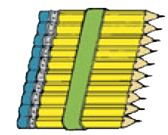
______	3 hours	A.	century
______	48 months	B.	2 years
______	120 seconds	C.	1 year
______	104 weeks	D.	decade
______	100 years	E.	180 minutes
______	365 days	F.	2 minutes
______	10 years	G.	4 years



5

1. Candy bars are 75 cents a piece. If Brian has $6.75, how many candy bars can he buy?

2. Mrs. Taylor bought 25 pencils for $1.25. How much did the pencils cost a piece?

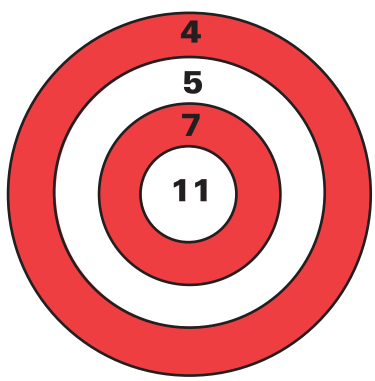


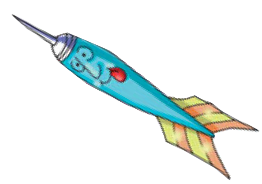
3. Trixie, Pauline, and Becky earned $22.50 for babysitting. If they split the amount three ways, how much will each girl receive?

4. Brookwood Elementary had a talent show put on by their teachers. The students came to see their teachers by the hundreds. The talent show earned the school $570.00. If they wanted to divide their profits equally between three charities, how much would each charity receive?

6

Use the dart board to answer the questions below.





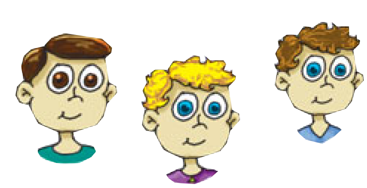
1. Steve threw three darts. Each dart hit a different ring for a total of 22 points. Where did each dart land?

2. Andrew threw three darts and they all landed on the same ring for a total of 21 points. Where did the darts land?

3. Peter had the highest score of all three boys. He had 23 points. Where did his three darts land?

4. What is the lowest score possible for three darts?

5. What is the highest score possible for three darts?



Similar Figures

Similar polygons and figures have the same shape, but not necessarily the same size. We use the symbol ~ to tell that two shapes are similar.

Triangle ABC is similar to triangle XYZ. We write: △ ABC ~ △ XYZ

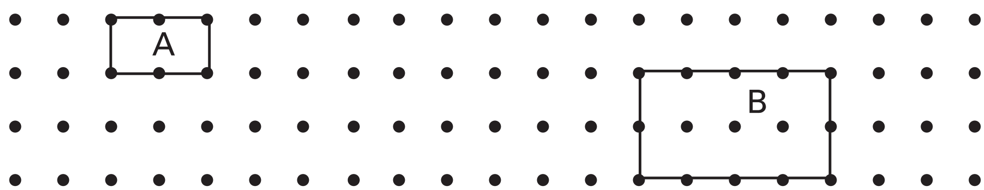
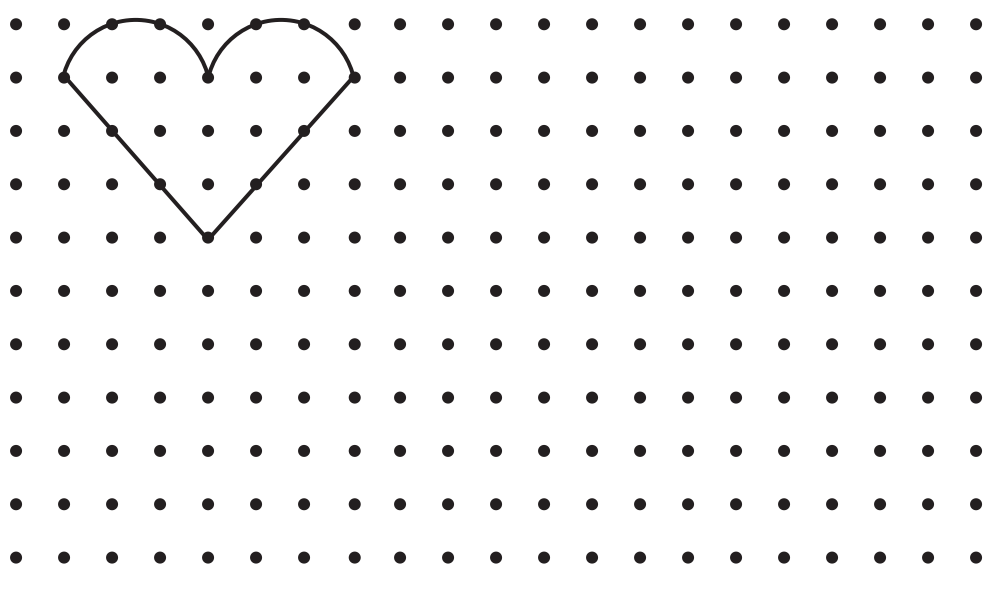


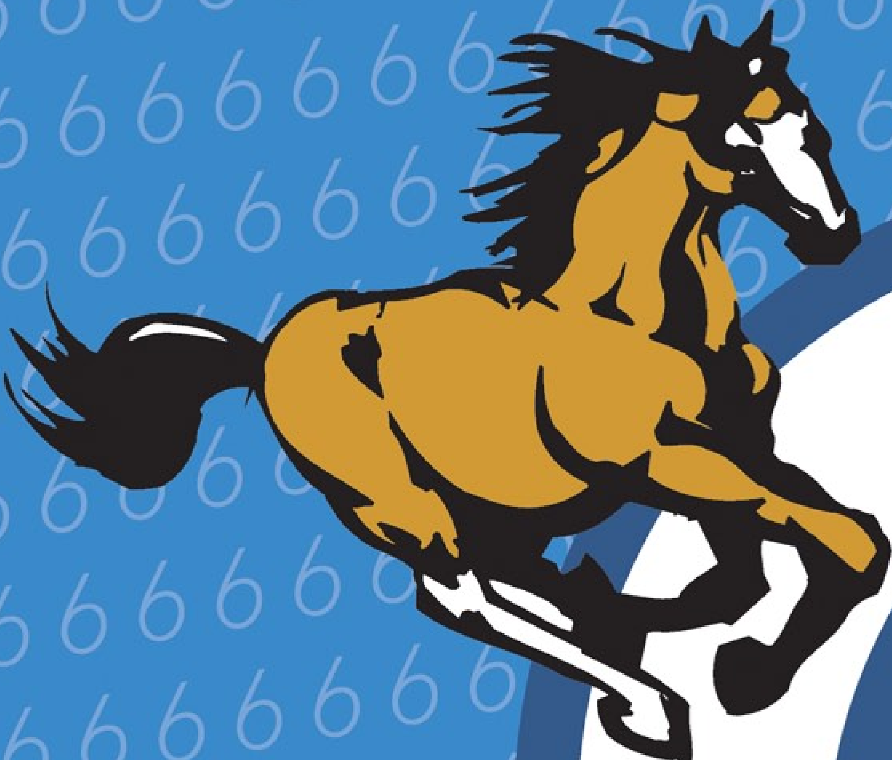
Figure A is similar to figure B.

1. Use the dots below to help you draw a figure that is similar to the one drawn. Also, draw a figure that is congruent to the figure shown.

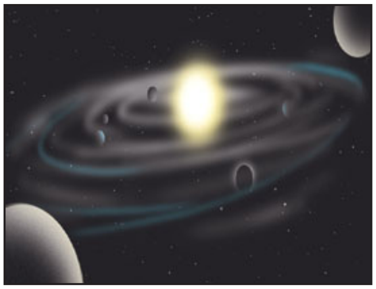


Horizons

Math 6



Numeration – Trillions



Genesis 1:14-19 And God said, "Let there be lights in the expanse of the sky to separate the day from the night, and let them serve as signs to mark seasons and days and years, and let there be lights in the expanse of the sky to give light on the earth." And it was so. God made two great lights, the greater light to govern the day and the lesser light to govern the night. He also made the stars. God set them in the expanse of the sky to give light on the earth, to govern the day and the night, and to separate light from darkness. And God saw that it was good. And there was evening, and there was morning the fourth day."

God took great care in creating our world. The massive size of our Solar System gives evidence of the omnipotence of our Heavenly Father. Scientists today measure the distance between planets in Astronomical Units (AU). An AU is the mean distance between the earth and the sun. One Astronomical Unit (AU) is about 92,960,000 miles (149,604,970 Km). Look at the chart below. This chart lists the distances from each planet to the Sun in both Astronomical Units (AU) and miles. Can you read each number correctly?

Planet	**AU**	**Miles**
Mercury	0.39	36,254,400
Venus	0.72	66,931,200
Earth	1	92,960,000
Mars	1.52	141,299,200
Jupiter	5.20	483,392,000
Saturn	9.54	886,838,400
Uranus	19.18	1,782,972,800
Neptune	30.06	2,794,377,600
Dwarf Planet Pluto	39.44	3,666,342,400

hundred trillions	ten trillions	trillions	hundred billions	ten billions	billions	hundred millions	ten millions	millions	hundred thousand	ten thousands	thousands	hundreds	tens	ones
					3	6	6	6	3	4	2	4	0	0

The number can be written in three different ways.

Standard Form: 3,666,342,400

Written Form: Three billion, six hundred sixty-six million, three hundred forty-two thousand, four hundred

Expanded Form: 3,000,000,000 + 600,000,000 + 60,000,000 + 6,000,000 + 300,000 + 40,000 + 2,000 + 400

OR

Expanded Form: (3 x 1,000,000,000) + (6 x 100,000,000) + (6 x 10,000,000) + (6 x 1,000,000) + (3 x 100,000) + (4 x 10,000) + (2 x 1,000) + (4 x 100)

$x \div 5 = 7$ $\quad$ $x \div 9 = 9$ $\quad$ $x \div 10 = 10$ $\quad$ $x \div 13 = 3$

$\frac{x}{7} = 7$ $\quad$ $\frac{x}{9} = 8$ $\quad$ $\frac{x}{9} = 7$ $\quad$ $\frac{x}{8} = 6$

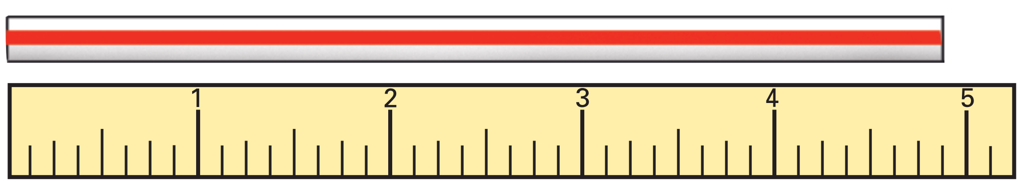
2 Find the difference.

$$\begin{array}{r} 569,241 \\ -\ 531,955 \\ \hline \end{array} \qquad \begin{array}{r} 900,801 \\ -\ 762,690 \\ \hline \end{array} \qquad \begin{array}{r} 306,082 \\ -\ 65,961 \\ \hline \end{array} \qquad \begin{array}{r} 225,909 \\ -\ 157,753 \\ \hline \end{array}$$

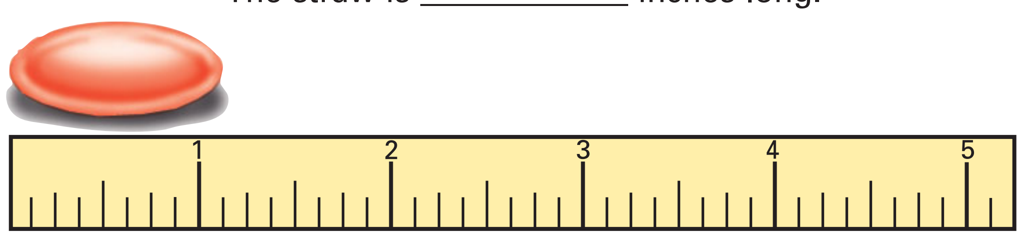
3 Find the sum.

$$\begin{array}{r} 909,270 \\ +\ 400,969 \\ \hline \end{array} \qquad \begin{array}{r} 978,822 \\ +\ 568,097 \\ \hline \end{array} \qquad \begin{array}{r} 586,702 \\ +\ 601,588 \\ \hline \end{array} \qquad \begin{array}{r} 656,342 \\ +\ 58,769 \\ \hline \end{array}$$

4 Write the measurement.



The straw is ____________ inches long.



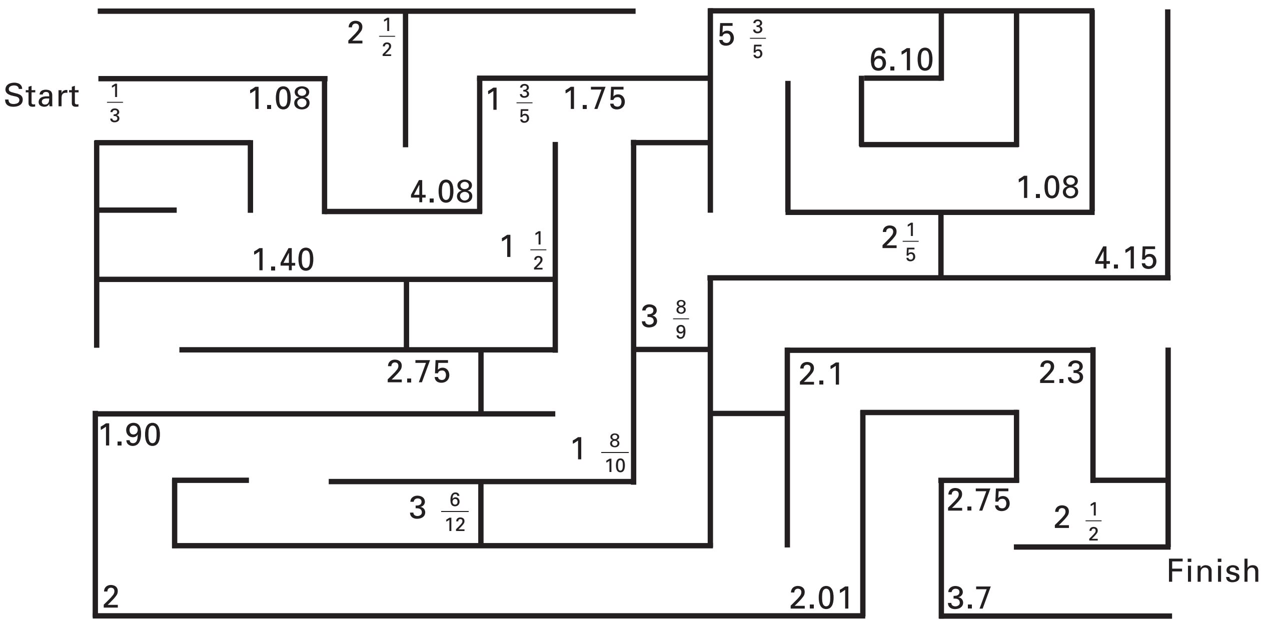
The candy is ____________ inches long.

2 **Change each mixed fraction to an improper fraction.**

$8\frac{1}{5} =$ ________ $8\frac{2}{9} =$ ________ $3\frac{7}{8} =$ ________ $11\frac{1}{6} =$ ________

$16\frac{4}{7} =$ ________ $15\frac{1}{2} =$ ________ $17\frac{1}{3} =$ ________ $12\frac{3}{4} =$ ________

3 **Find your way through the maze by finding the next greatest number.**



4 **Use the chart to solve the following problems.**

12 inches = 1 foot
36 inches = 3 feet = 1 yard
5,280 feet = 1,760 yards = 1 mile

14 feet = ____________ inches

108 inches = ____________ feet

4 miles = ____________ feet

3 miles = ____________ yards

27 feet = ____________ yards

10,560 feet = ____________ miles

18 yards = ____________ feet

2 yards = ____________ inches

Division

Many times you can look at a division problem and tell if an answer is too high or too low by using your knowledge of division and multiplication to estimate the answer in your head. Look at the example below.

Karen and Doug were moving from Georgia to Alaska. The trip would cover 5,000 miles by automobile. If they allowed 14 days to drive, how many miles per day would they need to travel in order to complete the trip in that amount of time?

Problem A

$$14\overline{)5{,}000}\quad 500$$

Problem B

$$14\overline{)5{,}000}\quad 200$$

Is the first answer shown too high of an estimate, or is the estimate too low? Think logically and use your knowledge of multiplication. If 14 rounds down to 10, then 10 x 500 would be 5,000. However, Doug and Karen have allowed 14 days. This means that the estimate in problem A of 500 miles per day is too large. What about the estimate in problem B? What is 14 x 200? 14 x 2 = 28, so 14 x 200 = 2,800. This estimate is too low. The correct answer must be somewhere between 200 and 500. Work the problem to find the actual number of miles they will need to travel each day.

$$14\overline{)5{,}000}\quad 357\text{ R2}$$

This means that Doug and Karen will need to drive at least 357 miles per day in order to reach Alaska in 14 days.

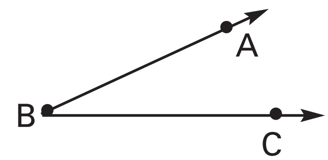
1 **Tell if the estimated answer is too high or too low. Then find the quotient.**

$11\overline{)7{,}243}$ estimate 200	$12\overline{)4{,}596}$ estimate 500	$23\overline{)2{,}111}$ estimate 70	$5\overline{)829}$ estimate 400

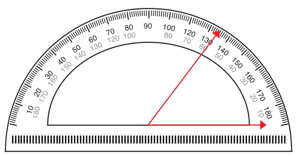
Classifying and Measuring Angles

An **angle** is two rays that share a common end point.

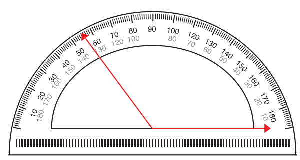
The rays $\overrightarrow{BA}$ and $\overrightarrow{BC}$ are called *sides*. They meet at vertex B to form an angle. The angle can be referred to as ∠ABC, ∠B, or ∠CBA.



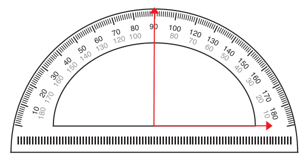
There are *four* kinds of angles:



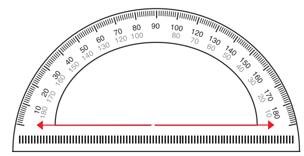
An **acute angle.** Less than 90°.



An **obtuse angle.** Greater than 90°.



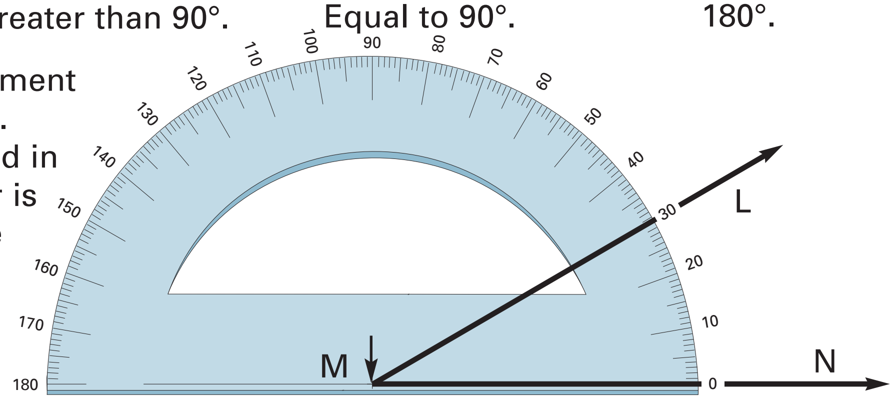
A **right angle.** Equal to 90°.



A **straight angle.** 180°.

A *protractor* is an instrument used to measure angles. The angles are measured in degrees. The protractor is marked with 180 degree (180°) units.

What is the measure of∠LMN?

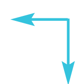
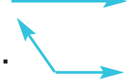
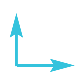


Follow these simple steps to measure an angle with a protractor:

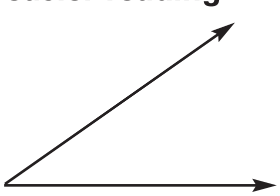
1. Place the arrow on the protractor on the vertex of the angle.
2. Place the zero edge on the side of the angle.
3. Read the measure of the angle.

∠LMN measures 30°

1 **Write** obtuse**,** acute **or** right angle.

1. 30° ____________________
2. 118° ____________________
3. 90° ____________________
4. 27° ____________________
5.  ____________________
6.  ____________________
7.  ____________________
8.  ____________________

Give the measure of each angle. You may need to extend the sides of the angle for easier reading.

1. 

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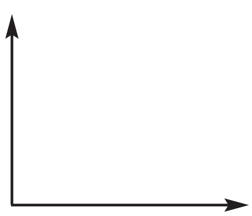
2. 

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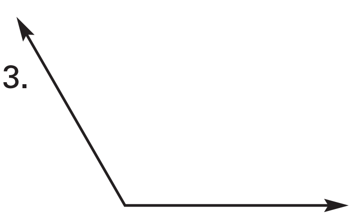
3. 

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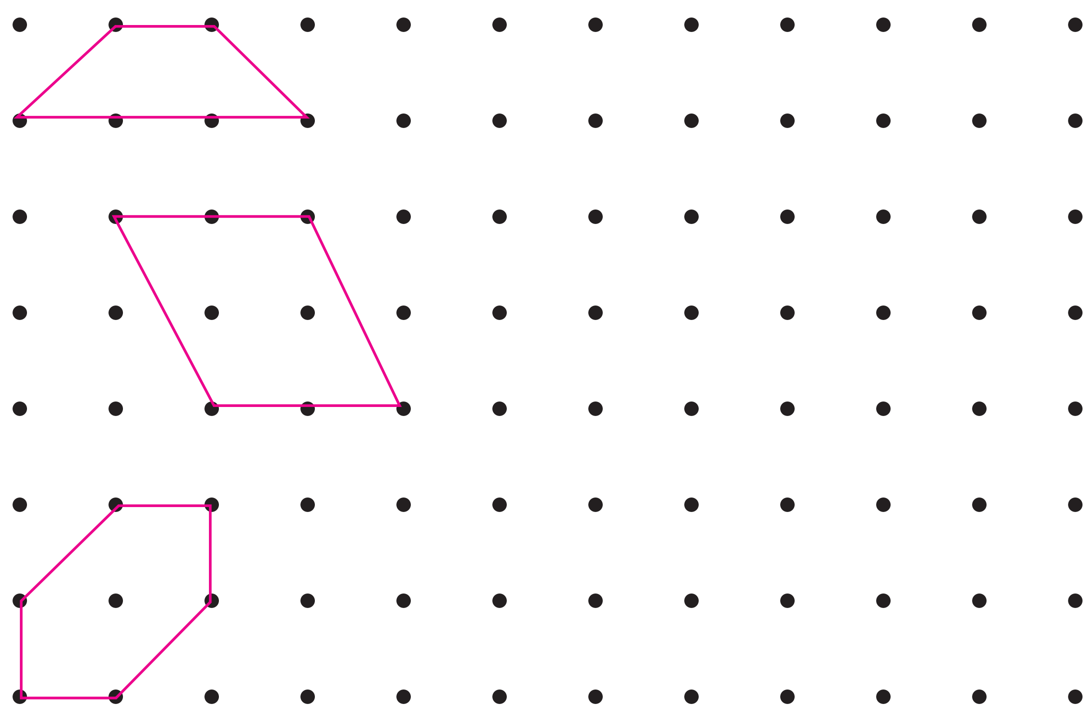
4 **Find the missing number.**

8.75 – ______________ = 6.36	13.30 – ______________ = 5.31
10.871 – ______________ = 9.682	139.060 – ______________ = 97.138
2,108.6 – ______________ = 1,039.9	5,362.51 – ______________ = 480.46

5 **Draw similar figures to the ones given.**

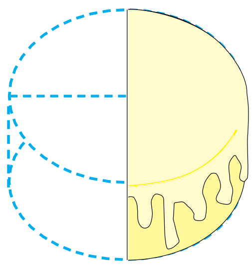


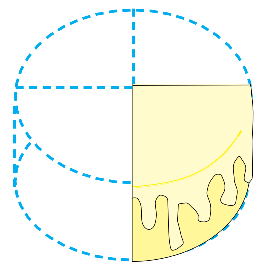
6 **Shade the fractions which are equivalent to $\frac{1}{2}$ and $\frac{2}{3}$.**

$\frac{9}{21}$	$\frac{9}{45}$	$\frac{25}{50}$	$\frac{7}{8}$	$\frac{12}{36}$
$\frac{14}{20}$	$\frac{6}{16}$	$\frac{10}{15}$	$\frac{11}{12}$	$\frac{1}{5}$
$\frac{7}{49}$	$\frac{20}{40}$	$\frac{30}{45}$	$\frac{4}{6}$	$\frac{5}{6}$
$\frac{1}{13}$	$\frac{8}{25}$	$\frac{44}{66}$	$\frac{15}{21}$	$\frac{11}{20}$
$\frac{2}{15}$	$\frac{19}{33}$	$\frac{9}{18}$	$\frac{2}{9}$	$\frac{5}{25}$
$\frac{4}{5}$	$\frac{30}{50}$	$\frac{5}{10}$	$\frac{1}{3}$	$\frac{20}{60}$

Multiplying Fractions

Michael had $\frac{1}{2}$ a cake to share among his friends. They ate $\frac{1}{2}$ of the remaining cake. What part of the whole cake did Michael and his friends eat?





They ate $\frac{1}{4}$ of the entire cake.

We want to find $\frac{1}{2}$ of $\frac{1}{2}$, so we multiply.

STEP 1: Multiply the numerators.

$\frac{1}{2} \times \frac{1}{2} = \frac{1}{?}$

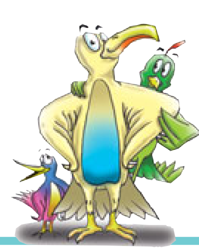
STEP 2: Multiply the denominators.

$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

1 **Multiply.** Reduce to the lowest terms.

$\frac{7}{8} \times \frac{1}{8} =$ $\frac{4}{5} \times \frac{1}{2} =$ $\frac{1}{9} \times \frac{2}{5} =$ $\frac{3}{7} \times \frac{1}{4} =$

$\frac{4}{6} \times \frac{1}{3} =$ $\frac{1}{3} \times \frac{4}{12} =$ $\frac{7}{15} \times \frac{1}{2} =$ $\frac{3}{8} \times \frac{9}{10} =$



2 **Solve.**

The Bearley's need 1,290 tiles to cover a floor and a splash area. The tiles are sold in boxes of 25 tiles each. How many boxes should they buy?

Coach Brian needs has 229 players in his T–Ball league. Each player is to be given a Loganville T–Ball League patch. If the patches come in packages of 15, how may packages does Coach Brian need to buy?

Latrobe First Baptist needs to mail 8 boxes of supplies to their missionaries in Africa. If the church has $425 to spend on shipping, and each box will cost approximately $65, how many of the 8 boxes can they ship with $425?

Each cabin at Youth Camp houses 12 students. If there are 69 girls going to camp and 43 boys going to camp, how many cabins will be needed for all the students? (Remember, girls and boys cannot share a cabin).

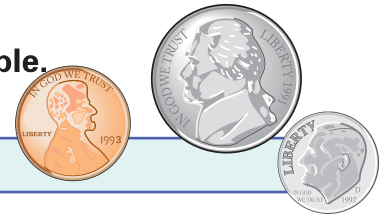
3 **Find the quotient.**

$0.5\overline{)3.20}$ $.82\overline{)2.952}$ $62.5\overline{)4.3125}$ $3.8\overline{)2.1280}$

4 **Convert the following numbers from base 2 into base 10.**

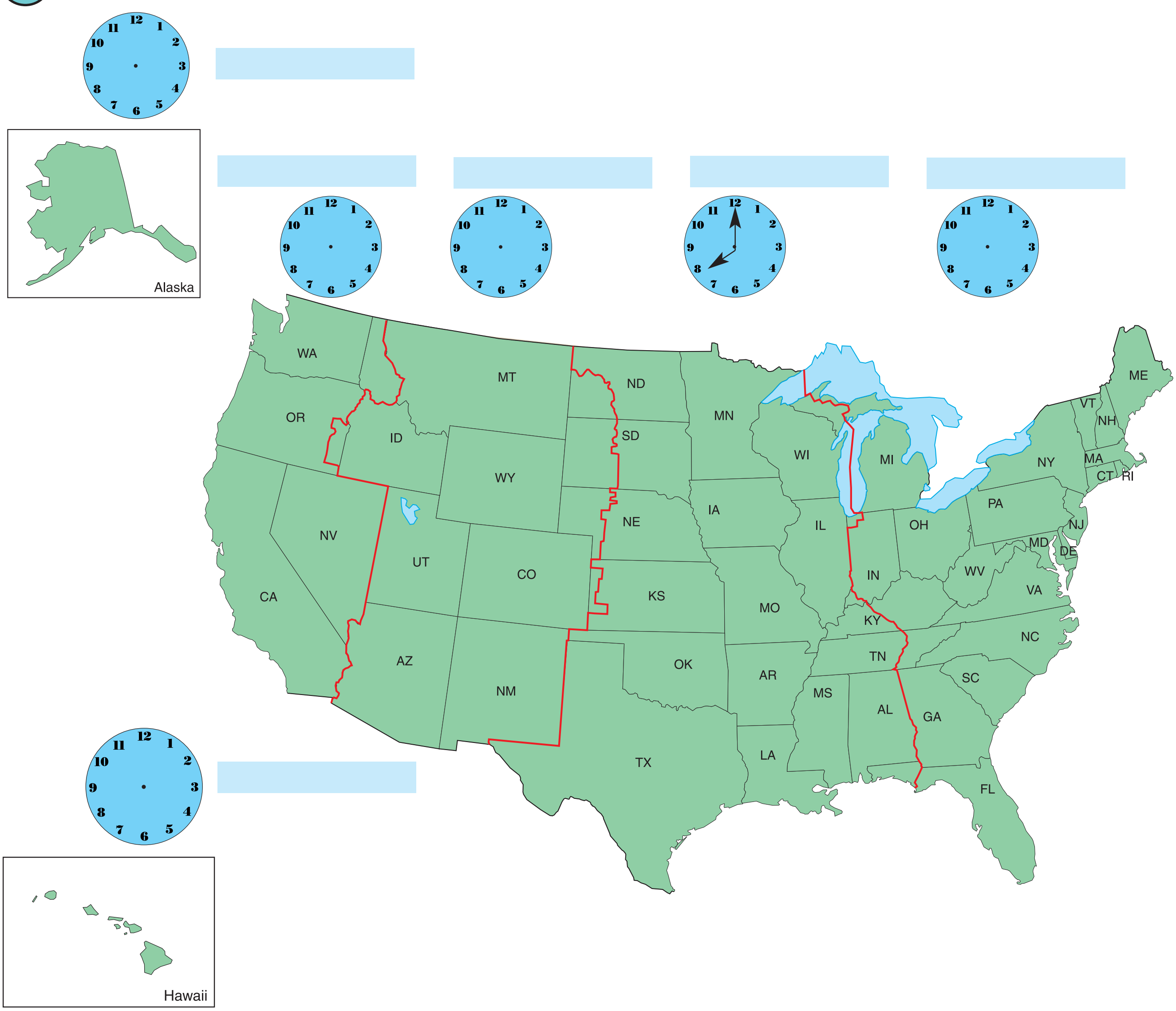
2^4	2^3	2^2	2^1	$2^0 = 1$
1	1	0	1	1 =
	1	1	1	1 =
	1	0	0	1 =
			1	1 =
1	0	1	1	0 =
1	1	1	1	1 =

5 **Count the change. Use the fewest coins and bills possible.**
Write the total amount due.



Price	Paid	Change Due
Example: $1.55	$5.00	3 dollars, 2 dimes, 1 quarter = $3.45
$3.14	$5.00	
$8.29	$10.00	
$12.30	$15.00	
$38.75	$40.00	
$12.19	$20.00	

6 **Label each time zone. Draw the correct time on the clock face in each time zone.**



Multiply a Fraction by a Whole Number

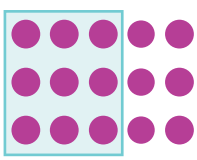
Clara collected data about the 15 children in her preschool class. She discovered that $\frac{3}{5}$ of the children have a pet at home. How many children in the class have a pet?

To find the fraction of a number we multiply:

What is $\frac{3}{5}$ of 15? **OR** **$\frac{3}{5}$ of 15 =**

When you see the word "of" in a mathematical equation, it means to multiply. Rewrite the equation and substitute a multiplication sign where the word "of" is written.

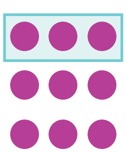
$\frac{3}{5}$ of 15 = 9 OR $\frac{3}{5} \times \frac{15}{1} = \frac{45}{5} = 9$



9 of the students in Clara's class have pets.

Clara also discovered $\frac{1}{3}$ of the students with pets have cats as pets.

How many students have cats?



$\frac{1}{3}$ of 9 = 3 OR $\frac{1}{3} \times \frac{9}{1} = 3$

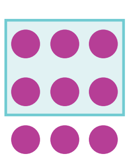
1 **Find the fraction of each number.** Draw pictures if necessary.

$\frac{1}{2}$ of 16

$\frac{1}{4}$ of 12

$\frac{1}{4}$ of 20

$\frac{2}{3}$ of 9



$\frac{1}{10}$ of 50

$\frac{2}{3}$ of 24

2 **Multiply.** Rename to lowest terms.

$\frac{23}{25} \times \frac{2}{10} =$

$\frac{9}{18} \times \frac{4}{8} =$

$\frac{7}{20} \times \frac{5}{8} =$

$\frac{56}{90} \times \frac{45}{50} =$

$\frac{6}{8} \times \frac{2}{3} =$

$\frac{15}{16} \times \frac{4}{3} =$

3 **Solve.**

The caterer made 250 mini quiches for the preschool brunch. If each person will eat 3 quiches, how many people will be fed?

A giant watermelon, weighing 30 pounds was cut into 20 equal slices. How much did each slice weigh?

How many boards 48 inches long can be cut from a board 168 inches long?

In your monthly budget you have allowed $175 for gasoline. If it takes approximately $21 to fill up your tank, how many times can you fill up in a month?

4 **Divide.**

2.095 ÷ 5 =

18.78 ÷ 6 =

17.334 ÷ .54 =

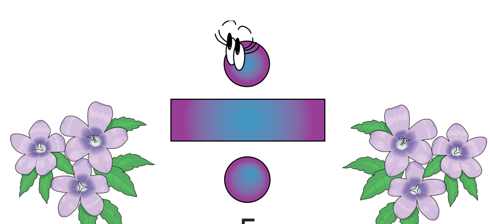
28.35 ÷ 5 =

482.4 ÷ 4.02 =

.0072 ÷ 8 =

.658 ÷ 7 =

9.54 ÷ 6 =



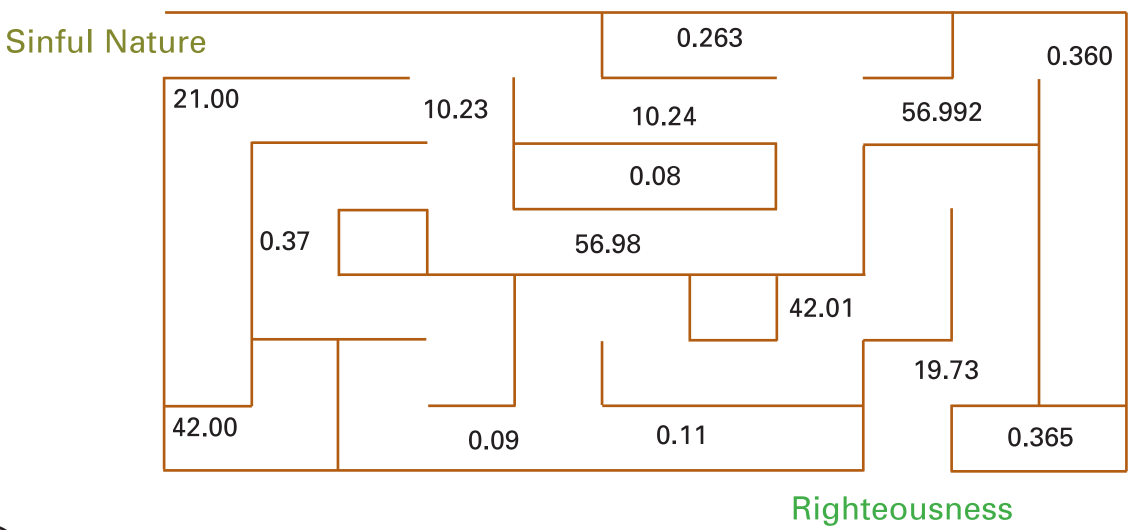
5 **Convert each base 10 number to its base 2 equivalent.**

56 = 63 = 9 = 23 =

6 **Round each number to the nearest hundredth in order to find your path through the maze.**

10.239 =_____ 56.982 =_____ 0.367 =_____

0.085 =_____ 42.006 =_____ 19.732 =_____



7 **Write the amount of change due from each transaction.** Use the fewest coins and bills possible.

Eileen purchased a set of tires for her car at a cost of $397.65. If she gave the cashier $500.00, how much change is she due?

Mr. Tomko used $295.00 to purchase a miter saw and $58.95 to purchase a new drill. How much change will he receive if he gives the cashier four one hundred dollar bills?

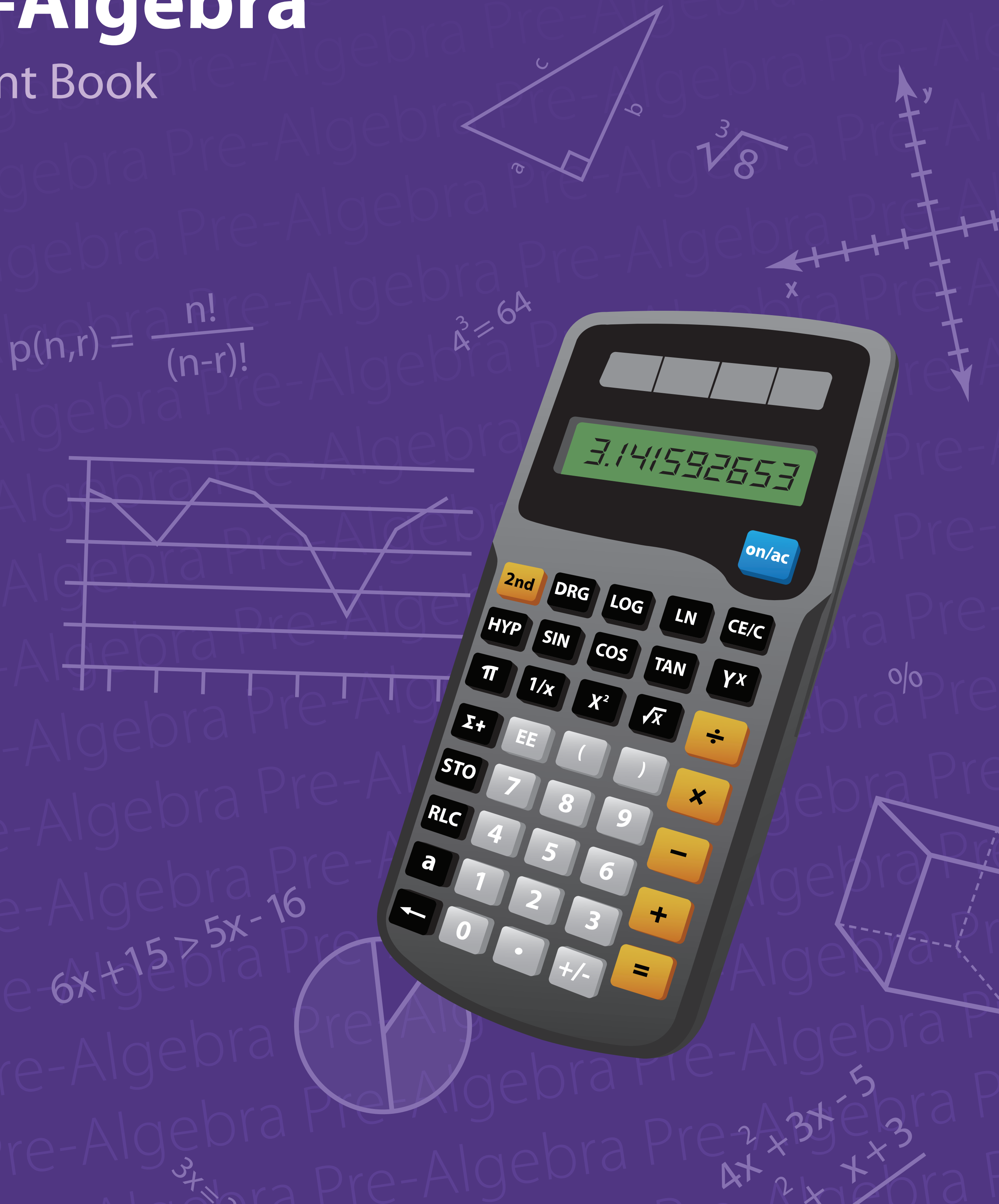
Kathy purchased a CD player. She paid the cashier with a $100.00 dollar bill. If she received a ten dollar bill and a quarter in change, how much did the CD player cost?

Mrs. Ross spent $146.25 at the grocery store. She then spent $35.65 at the grocery store's pharmacy. If she left the house with 3 one hundred dollar bills, how much cash does she now have? List what bills she has in her wallet if the cashier gave her the correct change.

Horizons

Pre-Algebra

Student Book



4 Find the greatest common factor of each set of numbers.

18, 24, and 36

14, 35, and 42

20, 32, and 36

5 Simplify.

$43.2 \times 10^0 =$	$0.063 \times 10^0 =$	$2.7 \div 10^0 =$
$0.871 \times 10^{-1} =$	$27.96 \times 10^1 =$	$66.49 \div 10^1 =$
$6.492 \times 10^{-2} =$	$3.18 \div 10^2 =$	$31.45 \div 10^2 =$
$0.5 \times 10^{-3} =$	$549.618 \div 10^3 =$	$0.088 \div 10^3 =$

6 Solve the word problems. Remember to label your answers.

Recipe for Buttermilk Biscuits (Makes 4 dozen biscuits)

8 cups flour	8 tablespoons butter
5 teaspoons baking powder	8 tablespoons shortening
1 teaspoon baking soda	4 cups buttermilk, chilled
1 tablespoon salt	

Diann is cooking for 192 people at church on Wednesday night. How much of each ingredient does Diann need to serve one biscuit to each person?

A 5-pound bag of flour contains about 20 cups of flour. How many 5-pound bags of flour must Diann purchase to ensure she has enough flour to bake biscuits for 192 people?

1. The aerial bucket ride at an amusement park allows a maximum of 8 park guests to exit or board at each stop. The chart below shows how many guests boarded and exited the bucket ride in each of the first 5 stops. If there were 38 guests on the ride at the start, how many were on the ride after the 5th stop?

Stop	**A**	**B**	**C**	**D**	**E**
Boarded	6	4	7	8	8
Exited	2	8	5	4	3

A. 10
B. 16
C. 34
D. 38
E. 49

2. Given $x+3=7$ and $y+12=20$, what is the value of $x+y$?

A. 4
B. 8
C. 12
D. 32
E. 42

3. In a football game, a touchdown with an extra point is worth a total of 7 points. A field goal is worth 3 points. If a team has 23 points, how many field goals have they scored? (Assume all extra points were made and no safeties or 2-point conversions were scored.)

A. 1
B. 2
C. 3
D. 4
E. 5

4. Given x is the square of an integer and a multiple of 9 and 18, find the value of x.

A. 3
B. 6
C. 9
D. 18
E. 36

A **rectangle** is a parallelogram with four congruent angles. Because a rectangle is a parallelogram, the formulas for perimeter and area remain the same.

A **square** is a rectangle with four congruent sides. Because a square has four congruent angles and four congruent sides, the formulas for perimeter and area can be simplified as follows:

$P = 4s$, where s is the length of a side

$A = s^2$, where s is the length of a side

List everything you know to be true about the diagram below. Find the perimeter and area.

Given: ▭$DCBA$; $DC = 7$; $CB = 4$

What you know:

It is a parallelogram. It is rectangle.

$\overline{AB} \parallel \overline{DC}, \overline{AD} \parallel \overline{BC}, \overline{AB} \cong \overline{DC}, \overline{AD} \cong \overline{BC}$

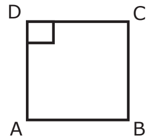
Each of the angles is equal to 360° ÷ 4 = 90°.

Perimeter is 2(7) + 2(4) = 14 + 8 = 22 units.

The area is 7(4) = 28 square units.

1 CLASSWORK

List everything you know to be true about the diagram below. Include the perimeter and area.

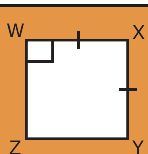


Given: ▭$DCBA$; $DC = 5$; $CB = 5$

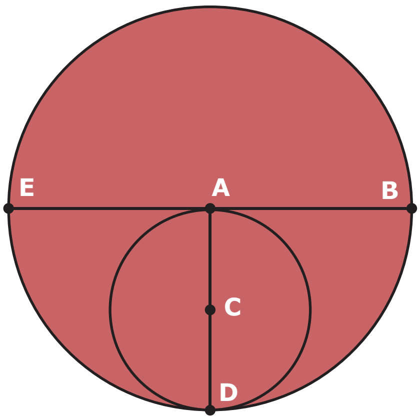
ACTIVITIES

2 List everything you know to be true about the diagrams below. Include the perimeter and area.

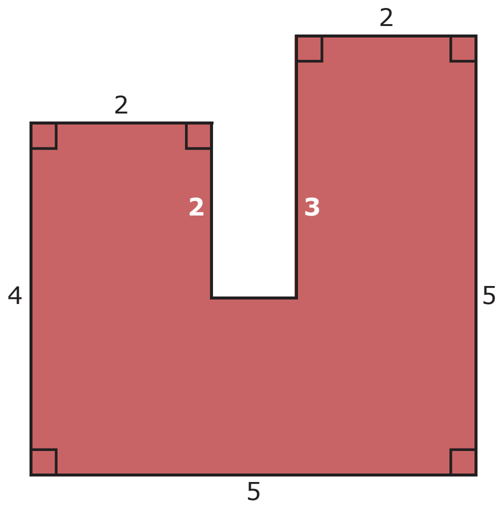
Given: ▭$WXYZ$; $WX = 4\frac{1}{2}$; $XY = 2\frac{1}{4}$



Given: ▭$WXYZ$; $WX = 4\frac{1}{2}$



1. In the figure above, A is the center of the large circle and C is the center of the small circle. If $CD = 3$, what is the length of $\overline{EB}$?
   A. 6
   B. 9
   C. 12
   D. 15
   E. 18



2. What is the area of the figure above?
   A. 20
   B. 22
   C. 23
   D. 24
   E. 25

Amie D. – Missionary Nurse

What is your occupation? I am a registered nurse and missionary wife.

Where do you work? I work in Soroti, Uganda. I am the mother of three. I am also the nurse for 30 orphans at the Soroti Orphan Assistance project (S.O.A.P) orphanage.

Did you attend college? If so, what was your major? Yes, I have a B.S. degree in nursing.

What parts of your job require the use of math? The recipes that I use have the oven temperatures in degrees Fahrenheit while the ovens I use are in Celsius. I need to convert the oven temperatures from Fahrenheit to Celsius. I also use math to calculate the medication dosages for children.

What is the biggest "problem" you have faced that required the use of math to solve? When a child needs medicine, I need to convert the dosages of the medication for that specific child.

Are there any other interesting math uses you have experienced? I use math to determine how much flour, sugar, etc. I need to buy to make various recipes. I also need to keep within a grocery shopping budget. This is difficult because I don't know the value of the dollar until I arrive in the capital city. When I get there, I buy groceries for the next two months. I need to determine how many kilos of ground beef I will need for two months of dinners.

A **function** is an equation in which each value of the independent variable has exactly one corresponding value of the dependent variable.

The values assigned to the independent variable are called the **domain**.

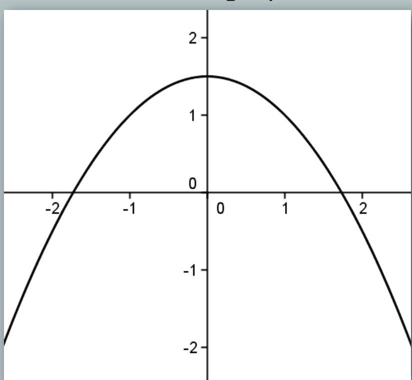
The corresponding values of the dependent variable are called the **range**.

A function is written in the format $f(x)$ and is read, "the function f of x," or, "the f of x."

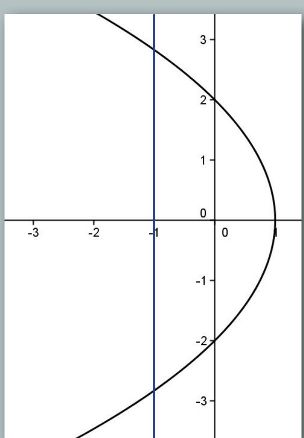
When graphing a function, the $f(x)$ side of the equation corresponds to the y portion of an equation. Plot points as usual and graph.

To look at a graph and instantly determine whether or not the graph is a function, use the **vertical line test**. If you can draw a vertical line on the graph and cross the graph in two or more points, the graph is not a function. Otherwise, the graph is a function.

Tell whether or not each graph is a function.



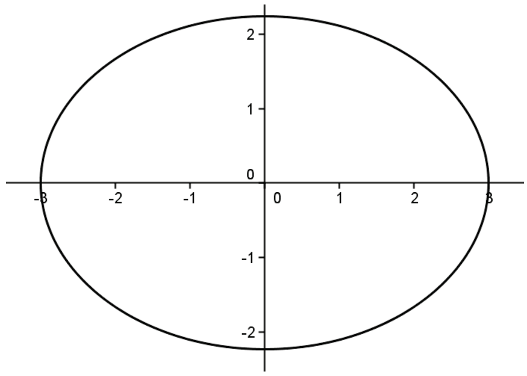
Yes. There is no way to draw a vertical line that intersects the graph in more than one point.

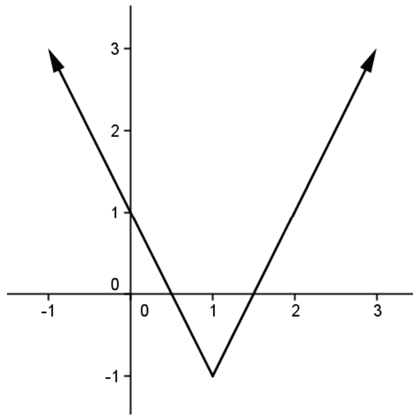


No. Notice that the blue vertical line intersects the graph in two places.

1 CLASSWORK

Tell whether or not each graph is a function.

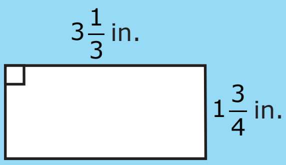
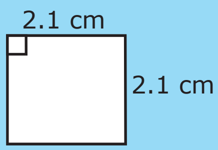
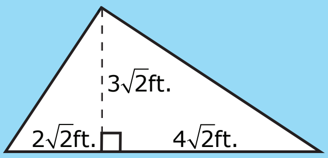
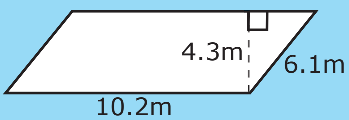
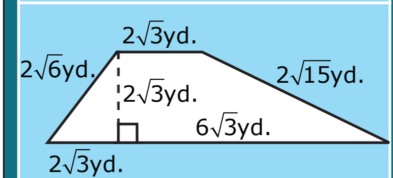




Graph the function $f(x) = 2x - 1$.

ACTIVITIES

1 Find the area of each base, and the volume of a prism having the indicated height.

Base of Prism	Area of Base	Prism Height	Volume of Prism
		$3\frac{3}{5}$ in.	
		2.1 cm	
		$4\sqrt{3}$ ft.	
		7.03 m	
		$5\sqrt{2}$ yd.	

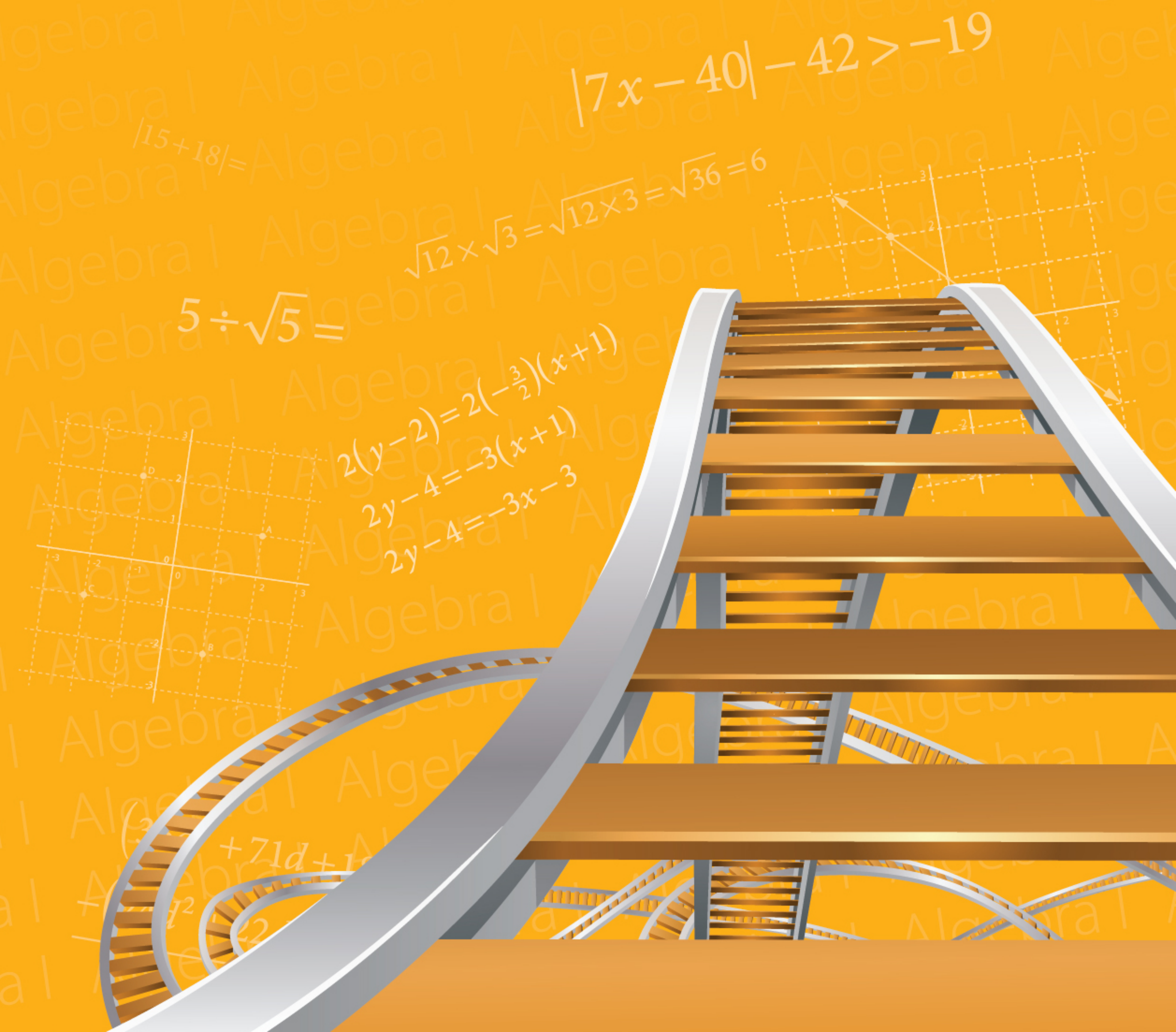
2 Complete the chart for cones.

Radius	Height	Slant Height	Volume	Lateral Area	Surface Area
5.2 in.	1.8 in.	1.8 in.			
6 m	8 m	10 m			

Horizons

Algebra I

Student Book



Introduction to...

Exploring Math through...

Often students ask:

Who uses this stuff anyway?

Will I ever have to use algebra in the real world?

I will NEVER be a math major. Why do I have to learn all this?

Math is a school subject that is used daily by people in their work, homes, and play. Many people use math in their jobs, even if those jobs do not require a college degree in mathematics. There is a good chance you will use math on an algebra level when you get a job. Math is also an integral part of recreation. Almost every sport or hobby uses math in some way.

While you may find some of the topics in algebra challenging, they will help you learn more about math and God's carefully designed world. You do not know what plans God has for your life. You may be surprised in the directions God leads you and find that you use math in ways you never expected.

Throughout this book, you will read about several sports and hobbies that require the use of math. Whether or not God's plan for your life includes college, math will play a role in your future.

> *"For I know the plans I have for you," declares the LORD, "plans to prosper you and not to harm you, plans to give you hope and a future."*
>
> —Jeremiah 29:11 NIV

Natural numbers are counting numbers. (1, 2, 3, . . .)

Whole numbers are the natural numbers and zero. (0, 1, 2, . . .)

Integers are the positive and negative whole numbers. (-1, 0, 1, . . .)

Rational numbers are numbers that can be written as a fraction. $\left(\frac{1}{2}, \frac{4}{3}, \frac{7}{1}, 10.5\right)$

Irrational numbers are numbers that CANNOT be written as a fraction. $\left(\sqrt{2}, \pi\right)$

Real numbers are numbers in any of the above categories.

Signed Number Rules:
When adding two numbers with the same sign, add the numbers like normal, and keep the same sign in the answer.
(+2) + (+5) = (+7) and (-2) + (-5) = (-7)

When adding two numbers with opposite signs, ignore the signs (use the absolute values) and subtract the smaller number from the larger number. Keep the sign of the larger number as the sign in the answer.

(+5) + (-2) = (5 – 2) = 3. 5 is larger than 2 and 5 is positive in the problem, so the answer is positive.
(+5) + (-2) = (+3).

(-5) + (+2) = -(5 – 2) = 3. 5 is larger than 2 and 5 is negative in the problem, so the answer is negative.
(-5) + (+2) = (-3)

When subtracting signed numbers, change the sign of the second number and add.
$(+5)-(-2)=(+5)+(+2)=5+2=7$

When multiplying two numbers with the same sign, the answer is ALWAYS positive.
$(+5)\times(+4)=20 \quad (-5)\times(-4)=20$

When multiplying two numbers with different signs, the answer is ALWAYS negative.
$(+5)\times(-4)=-20 \quad (-5)\times(+4)=-20$

When multiplying more than two numbers, count the number of negatives. If there is an even number of negative terms, the answer is positive. If there is an odd number of negative terms, the answer is negative.

When dividing signed numbers, follow the rules of multiplying signed numbers.

1 CLASSWORK

Identify each number as *natural*, *whole*, *integer*, *rational*, *irrational*, or *real*. Some numbers may have more than one answer.

	7	−4	$\sqrt{2}$	0	$1\frac{1}{4}$	$\frac{1}{6}$	π	5.3
Natural								
Whole								
Integer								
Rational								
Irrational								
Real								

Solve, using the rules for signed numbers.

(+42) + (+61) =

(+42) + (-61) =

(+42) – (-61) =

(-42) – (-61) =

(-3)(-4) =

(-3)(4) =

(-3)(4)(2) =

(-3)(-4)(2) =

$(+12)\div(-3)=$

$(-12)\div(-3)=$

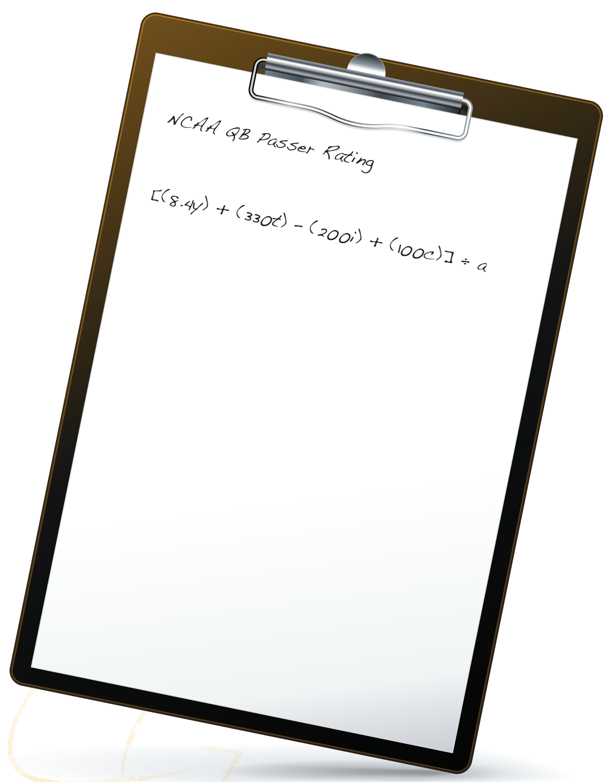
3 Solve, following the rules of signed numbers.

(+57) + (+73) =	(-3)(7)(2) =
(+57) + (-73) =	(8)(-7)(1) =
(-57) + (+73) =	(-9)(-7)(-1) =
(-57) + (-73) =	(-7)(8)(2) =
(+242) – (+397) =	(-4)(-9)(3) =
(+242) + (-397) =	(12)(5)(-2) =
(-242) + (+397) =	(-11)(2)(-4) =
(-242) – (-397) =	(-9)(-4)(-3) =

4 Solve.

The Passer Rating of a college football quarterback is calculated using the formula NCAA QB Passer Rating = [(8.4*y*) + (330*t*) – (200*i*) + (100*c*)] ÷ *a*, where *y* is the number of passing yards, *t* is the number of touchdowns thrown, *i* is the number of interceptions thrown, *c* is the number of completed passes, and *a* is the number of pass attempts.

Calculate the passer rating of a quarterback that had 220 passing yards, 1 touchdown thrown, no interceptions, 13 completed passes, and 17 pass attempts in his last game. Round answer to the nearest hundredth.



ACTIVITIES

2 Find the prime numbers in the list below by following the directions.

1. Cross out the number 1.
2. Circle the number 2. Cross out every other number after two (the multiples of 2).
3. Circle the number 3. Cross out every third number after three (the multiples of 3).
4. Circle the number 5. Cross out every fifth number after five (the multiples of 5).
5. Circle the number 7. Cross out every seventh number after seven (the multiples of 7).
6. Circle all remaining numbers. The circled numbers are the prime numbers less than 100.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Write the prime numbers less than 100.

_____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____,

_____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____,

3 Find the prime factorization of each number. Use exponents where appropriate.

12   14   15   20

21   22   24   25

4 Find the prime factorization of each number. Use exponents where appropriate.

27

28

30

32

33

35

5 Solve, following proper order of operations.

$5 + 12 \div 3 =$

$27 - 3 \times 5 =$

$13 - 2 \times 4 + 6 =$

$4 + 3^2 + 5 =$

$12 \div 6 \times 5 + 3 - 1 \times 7 =$

$16 \div 2^2 + 5 - 3 \times 2 =$

$(11 - 2)4 \div 6 - 5 =$

$(7 - 3)^2 - 20 \div 4 =$

$(4 + 3) - 2^2 + 6 \times 2 =$

$(11 - 8)^3 - 5^2 + 7 \times 2 =$

$3^3 \div 9 + (5 + 1) - 4 =$

$(2 \times 8 - (21 - 16) + 1) \div 6 =$

$((2 + 4 \times 3) \div 7)^2 =$

The opposite of raising a number to an exponent is taking the **root** of a number. The root is represented by the symbol $\sqrt{\ }$, called the **radical**. The number under the radical is called the **radicand** (or **argument**), and the number that indicates the root is called the **index** and corresponds to the exponent.
For example, $2^3 = 8$. To express this as a root, write $\sqrt[3]{8} = 2$, where 8 is the radicand, 3 is the index, and 2 is the root. In this case, 3 is the cube root of 8.

To find the **square root** of a number, find a number that, when multiplied by itself, gives the radicand.
For example, $\sqrt{16} = \sqrt{4 \times 4} = 4$

For larger numbers, write the radicand as the product of perfect square factors and find the square roots.

$\sqrt{128} = \sqrt{8 \times 8 \times 2} = 8\sqrt{2}$

To add or subtract roots, the radicands and indexes must be equal. Add the numbers immediately to the left of the radical. If there is no number, treat it as a 1.
For example, $\sqrt{3} + \sqrt{3} = 2\sqrt{3}$ and $2\sqrt{5} + 4\sqrt{5} = 6\sqrt{5}$.
If the radicands or indexes are not equal, the roots cannot be added or subtracted.

To multiply or divide roots with the same index, multiply or divide the radicands and write the answer under one radical. Multiply or divide the numbers outside the radical and write outside the radical in the answer. Simplify if necessary.

For example, $\sqrt{12} \times \sqrt{3} = \sqrt{12 \times 3} = \sqrt{36} = 6$

1 CLASSWORK

Rewrite the following expressions as roots.

$2^4 = 16$

$3^2 = 9$

$5^2 = 25$

$5^3 = 125$

$6^3 = 216$

Solve the following roots.

$\sqrt{16} =$

$\sqrt[3]{27} =$

$\sqrt{32} =$

$\sqrt[3]{16} =$

$\sqrt{2} + \sqrt{2} =$

$\sqrt{5} + 2\sqrt{5} =$

$\sqrt[3]{10} + 5\sqrt[3]{10} =$

$6\sqrt{7} - 4\sqrt{7} =$

$5\sqrt[3]{5} - 4\sqrt[3]{5} =$

$\left(\sqrt{10}\right)\left(\sqrt{2}\right) =$

$\left(3\sqrt{5}\right)\left(2\sqrt{2}\right) =$

$\sqrt{27} \div \sqrt{3} =$

$10\sqrt[3]{16} \div 5\sqrt[3]{4} =$

$3 \div \sqrt{3} =$

ACTIVITIES

2 Rewrite the following expressions as roots.

$2^6 = 64$

$5^2 = 25$

$4^3 = 64$

$8^2 = 64$

$3^4 = 81$

$7^2 = 49$

A **polynomial** is an algebraic expression. If that expression contains two or more terms, the terms must be separated by a plus or minus sign. All variables must have a positive integer as an exponent, and no variable may appear in a denominator.

A **constant** is a term that has a number but no variable.

A **coefficient** is a number that is multiplied by a variable.

A **monomial** is an expression containing one term, such as x^2, $3x$, or 5. A constant is a monomial.

A **binomial** is a polynomial containing two terms, such as $3x + 5$ or $x^2 - 4x$.

A **trinomial** is a polynomial containing three terms, such as $x^2 - 4x + 3$.

Identify whether or not each expression is a polynomial. For each polynomial, identify it as a constant, monomial, binomial, or trinomial.

$x^2 + 2x - 1$
This is a polynomial and a trinomial.

$4x^{-2} - 3x + 7$
This is not a polynomial because there is a -2 as an exponent.

1 CLASSWORK

Identify whether or not each expression is a polynomial. For each polynomial, identify it as a constant, monomial, binomial, or trinomial.

$6x - 4$

17

$4x^2 + \frac{5}{x} - 3$

$3x^{-2} - 5$

$3x^2 - 4x + 2$

ACTIVITIES

2 Identify whether or not each expression is a polynomial. For each polynomial, identify it as a constant, monomial, binomial, or trinomial.

$9x - 4$

$7x^2 + \frac{3}{x} - 4$

$8x^{-2} + 9$

31

$10x^2 - 13x + 6$

-3x

The **Distributive Property** allows another method of working with parenthetical expressions that are multiplied by a single factor.

In some cases, it is easier to multiply each term in the parentheses by the factor outside the parentheses and then simplify.

$2(15+13)=2(15)+2(13)=30+26=56$ rather than $2(15+13)=2(28)=56$

1 CLASSWORK

Simplify the expressions, using the distributive property.

$4(10+9)=$

$5(12+7)=$

$9(20-3)=$

Something to Think About...
Two parentheses next to each other with no symbol between them means multiply.
(5)(4) = 20   (-5)(4) = −20

Commutative Property of Multiplication: You can change the order of the terms and still get the same product.
$2\times3=6$ and $3\times2=6$

Associative Property of Multiplication:
You can group the terms in different ways and still get the same product.
$2\times(3\times4)=2\times12=24$ and
$(2\times3)\times4=6\times4=24$

Identity Property of Multiplication:
You can multiply any number by one and the product is always the number.
$0\times4=0$ and $4\times0=0$

ACTIVITIES

2 Use the distributive property to simplify each expression.

$2(35+7)=$

$4(9+5)=$

$7(1+40)=$

$7(30+9)=$

$8(20+9)=$

$4(25+9+15)=$

3 Solve the following roots.

$\sqrt[3]{375}-2\sqrt[3]{24}=$

$(\sqrt{10})(\sqrt{5})=$

$(4\sqrt{5})(3\sqrt{15})=$

$\sqrt{27}\div3=$

$12\sqrt[3]{54}\div3\sqrt[3]{2}=$

1 P = the set of positive integer factors of 16
Q = the set of positive integer factors of 20
R = the set of positive integer factors of 24

P, Q, and R represent three sets of numbers, as defined above. Which set of numbers below belongs to all three sets?

A. {1, 2, 4}
B. {1, 2, 3, 4}
C. {1, 2, 4, 16}
D. {1, 2, 3, 4, 16}
E. {1, 2, 3, 4, 16, 24}

2 Given $4(e-f)-5=3$, what is the value of $e-f$?

A. $-\frac{1}{2}$
B. 2
C. 4
D. 8
E. 32

3 Given $(3+a)(7-b)=0$ and a is a natural number, what is the value of b?

A. -7
B. -3
C. 0
D. 3
E. 7

4 If $13^7 \times 13^x = 13^{21}$, what is the value of x?

A. 3
B. 7
C. 14
D. 21
E. 147

Horizons

Enhance Your Homeschool with Horizons