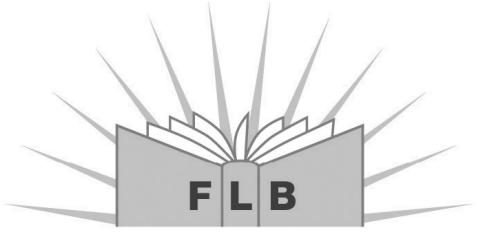
EDUREALM SERIES

A Standards-Based Resource

MATHEMATICS

Student Practice Book

LEVEL G



Firelight Books

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SQUARES AND SQUARE ROOTS

A square is the product of any number multiplied by itself. Ex: 49 is the square of 7.
A square root is a number that when multiplied by itself equals a given number.
Ex: $5 \times 5 = 25$; the square root of 25 is 5.

Write the standard numerals.

Example

$3^2 = \_9\_$
3^2 is read "3 squared."
$\sqrt{9} = \_3\_$
$\sqrt{9} = 3$ is read "the square root of 9 is 3."

1. 2^2 = _____
2. 3^2 = _____
3. 4^2 = _____
4. 5^2 = _____
5. 6^2 = _____
6. 7^2 = _____
7. 8^2 = _____
8. 9^2 = _____
9. 10^2 = _____
10. 11^2 = _____
11. 12^2 = _____
12. 13^2 = _____

Write the square roots.

13. $\sqrt{49}$ = _____
14. $\sqrt{100}$ = _____
15. $\sqrt{81}$ = _____
16. $\sqrt{64}$ = _____
17. $\sqrt{25}$ = _____
18. $\sqrt{144}$ = _____
19. $\sqrt{121}$ = _____
20. $\sqrt{400}$ = _____
21. $\sqrt{36}$ = _____
22. $\sqrt{225}$ = _____
23. $\sqrt{169}$ = _____
24. $\sqrt{10{,}000}$ = _____

The square roots above are perfect squares because their answers are whole numbers. Use a calculator to find the square roots of numbers that are not perfect squares. Press the number and then the $\sqrt{\ }$ key to find the answer.
Find the square roots of the numbers below. Round to ten thousands.

25. $\sqrt{2}$ = _____
26. $\sqrt{3}$ = _____
27. $\sqrt{5}$ = _____
28. $\sqrt{6}$ = _____
29. $\sqrt{8}$ = _____
30. $\sqrt{10}$ = _____

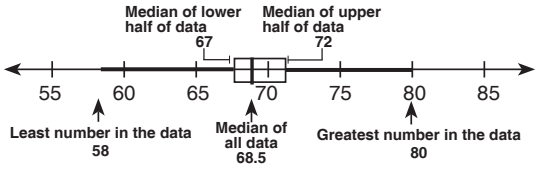
BOX-AND-WHISKER GRAPHS

A box-and-whisker graph is used to show the distribution of data into fourths. It also shows the range and median.

Sketch a box-and-whisker graph for each set of data. Write each range in the blanks.

Ex: The Care Center recorded the ages of the senior citizens that visited the center one day. The ages were 67, 72, 68, 71, 68, 73, 80, 66, 58, and 69.

58 – 80 OR 22



1. Randi recorded the number of pages she read in her book each night. She recorded 22, 25, 19, 32,19, 25, 22, 25, 35, and 28.

   _____

2. Melvin kept a record of the number of points he scored during each basketball game. He scored 8, 12, 10, 8, 16, 21, 13, 9, 12, and 8.

   _____

3. A police officer working a busy intersection recorded the number of cars that were able to go through a green light before it turned yellow. The number of cars were 8, 9, 6, 12, 10, 2, 9, and 5.

   _____

4. The ages of the girls in the Martial Arts competition were listed in the program. The ages were 16, 18, 20, 16, 18, 17, 19, 21, 18, 17, 15, 16, 21, and 20.

   _____

TRANSFORMATIONS

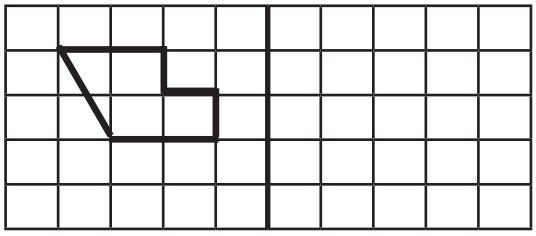
A transformation is a movement a figure makes along a line.

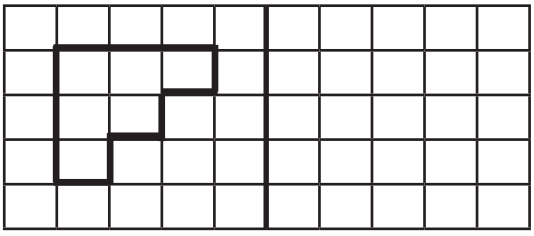
A translation (slide) is the movement of a figure without rotating or flipping.

A reflection is the move of a figure across a line of reflection. It makes a mirror image of the figure.

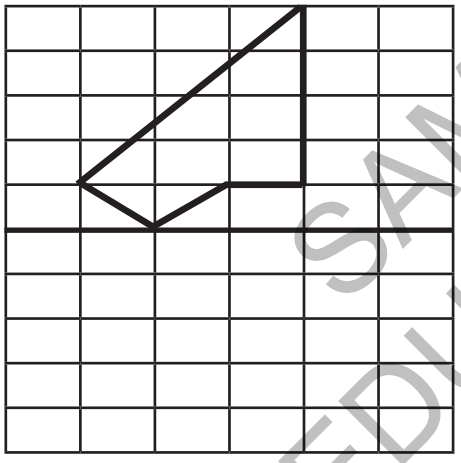
A rotation is the movement of a figure about a single point.

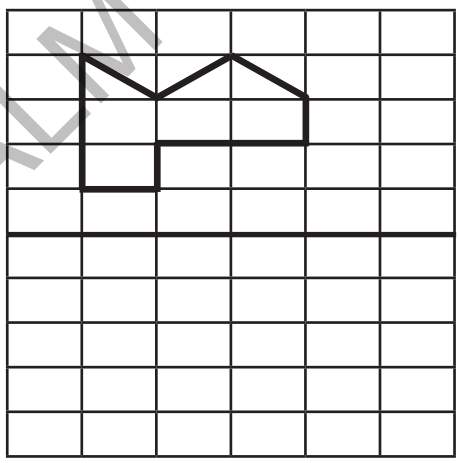
Draw translations of the following figures.

1. 

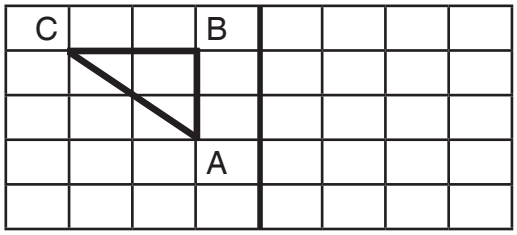
2. 

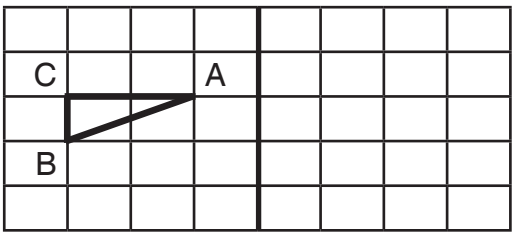
Draw reflections of the following figures across the lines of reflection that are darker.

3. 

4. 

Draw 90° rotations of the following figures.

5. 

6. 

STRAND: Mathematical Process **Problem Solving**

TOO MUCH/TOO LITTLE INFORMATION

Some problems cannot be solved because they do not provide enough information. Other problems can be confusing because they provide too much information.

Solve if possible. If you do not have enough information, tell what information is missing. If a problem has information that is not needed, draw a single line through the information that you do not need.

1. A hamburger and a cold drink cost a total of $3.60. A large order of fries costs $1.99. What is the total cost of four large fries? _____

2. Wade is 14 years old now, and he is three years older than his sister. How old will his brother Ron be in two years if he is six years older than their sister? _____
   _____

3. Ava bought a pair of shoes for $32.00 and two pairs of socks. How much did Ava pay for the shoes and the socks? _____

4. Ray placed a 12 lb rock in a metal box. How many pounds do the box and rock weigh all together? _____

5. One day, The Cookie Factory sold eight dozen chocolate chip cookies, five dozen sugar cookies, two birthday cakes, and six pies. How many cookies were sold?
   _____

6. There were 480 people at the dance. One-fourth of the people were students and $\frac{1}{8}$ were chaperones. How many students were at the dance? _____

7. Levi had an antique boat paddle. He placed hooks down the length of the paddle so he could use it as a coat rack. How many hooks did Levi use? _____

8. Ana cut her birthday cake into 20 equal pieces. How big was each piece of cake?
   _____

9. Jon scored 28 points over the last four games. If he scored the same amount of points in each game, how many points did he score in the last game? _____

10. Grace used 2 $\frac{1}{2}$ cups of flour, 3 t salt, 1 cup sugar, $\frac{1}{2}$ cup oil, and 3 eggs in her cake. The same cake sold for $14.00 at the local bakery. How much did Grace save by baking the cake herself? _____

ROMAN NUMERALS

Roman numerals are the numbers the people of the Roman Empire used hundreds of years ago. When reading Roman numerals use these rules:

- If a larger number appears to the left of a smaller number, add the values.
- If a larger number appears to the right of a smaller number, subtract the smaller number from the larger number.

Roman Numeral Chart

1 I	10 X	19 XIX	28 XXVIII	90 XC	700 DCC
2 II	11 XI	20 XX	29 XXIX	100 C	800 DCCC
3 III	12 XII	21 XXI	30 XXX	101 CI	900 CM
4 IV	13 XIII	22 XXII	31 XXXI	150 CL	1000 M
5 V	14 XIV	23 XXIII	40 XL	200 CC	1600 MDC
6 VI	15 XV	24 XXIV	50 L	300 CCC	1700 MDCC
7 VII	16 XVI	25 XXV	60 LX	400 CD	1900 MCM
8 VIII	17 XVII	26 XXVI	70 LXX	500 D	
9 IX	18 XVIII	27 XXVII	80 LXXX	600 DC	

Write the Arabic numerals for the following Roman numerals.

1. VII _____
2. XL _____
3. CM _____
4. MXL _____
5. LXX _____
6. CLX _____
7. MCM _____
8. MCMXC _____
9. DXVIII _____
10. MCXXX _____

Write the Roman numerals for the following Arabic numerals.

11. 3,050 _____
12. 155 _____
13. 288 _____
14. 1,965 _____
15. 512 _____
16. 999 _____
17. 1,467 _____
18. 644 _____
19. 910 _____
20. 3,333 _____

Apply what you know. Answer using Roman numerals.

21. Write the year of your birth. _____
22. Write the year you will graduate from high school. _____