



## Get Ready for 7th Grade Math- Summer Work Instructions

It is important to keep your skills sharp to be ready for math this fall. This summer work is a review of the most important concepts you have learned this past year.

1. Print and complete these [work pages](#). You must show all of your work! Bring them to your math teacher on or before September 19th. This work will be part of your first marking period grade.
2. Study all multiplication facts. You can use flashcards or online games to practice. You should know all facts 1-12 quickly and automatically.

X	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

# Unit 1 Practice

Name: \_\_\_\_\_

## Ratios and Proportional Relationships

In this unit you learned to:	Lesson
write a ratio to describe the relationship between two quantities.	1
find the rate and unit rate associated with a given ratio.	2
compare ratios and find equivalent ratios.	3
solve unit rate problems.	4
solve percent problems.	5

### Use these skills to solve problems 1–6.

- 1 Hui walks at a constant speed when he walks for exercise. The table shows how many miles Hui can walk in different amounts of time. Complete the table.

Number of Miles	Number of Minutes
$\frac{1}{2}$	6
1	
	24
	42

- 2 Two identical boxes of softballs weigh a total of 480 ounces. Sixteen identical boxes of baseballs weigh a total of 224 pounds. Does a box of baseballs weigh more or less than a box of softballs? Explain.

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**Solve.**

**3** At basketball practice, Kyla made 60 free throws. This was 80% of her attempts. How many free throws did Kyla attempt?

- A** 48 free throws      **C** 75 free throws  
**B** 68 free throws      **D** 80 free throws

**4** Jolene can read 10 pages in 20 minutes. How fast can she read? Select all that apply.

- A** 5 pages every 10 minutes      **C** 1 page every 2 minutes  
**B** 2 pages every 1 minute      **D**  $\frac{1}{2}$  page every 1 minute

**5** Philip has 5 red counters, 6 yellow counters, and 9 green counters. Tell whether each statement is *True* or *False*.

- a.** The ratio of yellow counters to green counters is 2 : 3.       True       False  
**b.** The ratio of red counters to the total number of counters is 1 to 3.       True       False  
**c.** The ratio of all counters to yellow counters is  $\frac{10}{3}$ .       True       False  
**d.** Green counters make up 45% of all the counters.       True       False

**6** Dawit was earning \$100 per week in January. He got a raise of 10% in March, but then he had a 10% reduction in his weekly pay after changing jobs in August. Was Dawit's weekly pay after August higher, lower, or the same as it was in January? Explain.

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# Unit 2 Practice

Name: \_\_\_\_\_

## The Number System

In this unit you learned to:	Lesson
explain how to divide fractions, for example: explain why $\frac{2}{3} \div \frac{3}{4} = \frac{8}{9}$ .	6, 7
divide multi-digit whole numbers, for example: $26,304 \div 24 = 1,096$ .	8
add and subtract multi-digit decimals, for example: $3.1 - 1.534 = 1.566$ .	9
multiply and divide decimals, for example: $32.5 \div 0.25 = 130$ .	10
find common factors and common multiples, for example: common factors of 4 and 6 are 1 and 2, and common multiples are 12 and 24.	11
recognize real-world uses for negative numbers and locate them on a number line.	12
order integers and find absolute value, for example: $-7 < -5$ and $-5 < 2$ .	13
plot points in the four quadrants of the coordinate plane.	14

### Use these skills to solve problems 1–8.

1 Which expression is equivalent to  $25.85 \div 1.5$ ?

- A  $2,585 \div 15$
- B  $258.5 \div 15$
- C  $258.5 \div 0.15$
- D  $25.85 \div 15$

2 How many decimal places are in the product  $4.45 \times 7.3$ ?

- A 1
- B 2
- C 3
- D 4

3 A principal orders 2,592 pencils. She gives an equal number to each of 24 teachers. How many pencils does each teacher get?

\_\_\_\_\_

4 Greta reads  $1\frac{1}{2}$  pages per minute when she reads her English homework assignment. At this rate, how long does it take Greta to read 60 pages?

\_\_\_\_\_



**Solve.**

**5** Which statement is true? Select all that apply.

**A**  $-5\frac{1}{4} > 2\frac{3}{4}$

**B**  $-7.1 > -7.8$

**C**  $2\frac{1}{2} < -9$

**D**  $-6\frac{3}{5} < 6\frac{2}{5}$

**6** The area of one rectangle is 36 square feet. The area of a second rectangle is 21 square feet. The rectangles have the same width and the dimensions are whole numbers. What is the width of both rectangles?

**A** 3 feet

**C** 7 feet

**B** 6 feet

**D** 12 feet

**7** Mary walked 23.61 miles this month. That is 8.625 more miles than she walked last month. What is the total number of miles that she walked in both months?

**Show your work.**

*Solution:* \_\_\_\_\_

**8** Rectangle  $ABCD$  is formed by connecting four points. Point  $A$  is located at  $(-3, 5)$ . Point  $B$  is a reflection of point  $A$  across the  $y$ -axis. Point  $D$  is a reflection of point  $A$  across the  $x$ -axis. Point  $C$  is a reflection of point  $D$  across the  $y$ -axis.

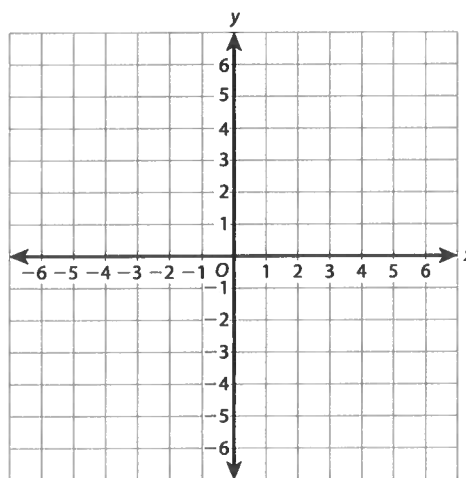
**Part A**

Draw the rectangle and label the points.

**Part B**

What is the perimeter of the rectangle?

\_\_\_\_\_



# Unit 3 Practice

Name: \_\_\_\_\_

## Expressions and Equations

In this unit you learned to:	Lesson
evaluate numerical expressions that contain exponents, for example: $2^4 + 6 = 22$ .	15
interpret and evaluate algebraic expressions, for example: $2(x + 7)$ means twice the sum of a number and 7.	16, 17
solve equations, for example: if $3 = \frac{1}{2}k$ , then $k = 6$ .	18, 19
solve inequalities, for example: if $3x \geq 15$ , then $x \geq 5$ .	20
use equations and inequalities to solve word problems.	19, 20
write equations to show the relationship between dependent and independent variables.	21

### Use these skills to solve problems 1–8.

1 Which inequality is true?

- A  $4^2 > 2^4$
- B  $(5 + 2)^2 > 5^2 + 2^2$
- C  $4^2 > 3^3$
- D  $1 + 2^3 < 3^2 - 1$

2 Which equation has a solution of  $n = 4$ ?

- A  $6 + n = 24$
- B  $5n = 54$
- C  $12 - n = 16$
- D  $7n = 28$

3 Bryce has 4 less than 3 times as many baseball cards as Dwight. Let  $x$  represent the number of cards that Dwight has.

**Part A:** Write an expression for the number of baseball cards Bryce has.

\_\_\_\_\_

**Part B:** How many baseball cards does Bryce have if Dwight has 25 cards?

\_\_\_\_\_

4 The perimeter of a square is at most 22 feet. Let  $n$  represent the length of one side of the square.

**Part A:** Write an inequality that represents the situation.

\_\_\_\_\_

**Part B:** Of the lengths 2.5 ft, 4.8 ft, 5.2 ft, 5.8 ft, 6 ft, which could be the side length of the square? Write all that apply.

\_\_\_\_\_



**Solve.**

- 5 The equation  $c = 45h + 80$  represents the total cost,  $c$ , of a car repair that takes  $h$  hours.

**Part A:** Identify the dependent and independent variables.

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**Part B:** Write three ordered pairs that satisfy the equation.

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- 6 The length of a rectangle is 2 inches less than 5 times the width,  $w$ . What is an expression for the perimeter of the rectangle, in inches? Select all that apply.

- A  $2(5w - 2) + 2w$   
B  $w + w + 5w + 5w - 2$   
C  $2(6w - 2)$   
D  $12w - 4$

- 7 There are a total of 420 students at South School. This is 3 times the number of students in the sixth grade. How many students,  $n$ , are there in the sixth grade?

**Show your work.**

*Solution:* \_\_\_\_\_

- 8 Solve the equation for  $x$ .  
 $ax + bx = 14$

**Show your work.**

*Solution:* \_\_\_\_\_

# Unit 4 Practice

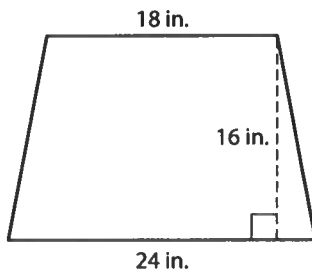
Name: \_\_\_\_\_

## Geometry

In this unit you learned to:	Lesson
find the area of triangles, quadrilaterals, and other polygons.	22
solve problems with polygons in the coordinate plane.	23
use nets to find the surface area of three-dimensional figures.	24
find the volume of a rectangular prism with fractional edge lengths, for example: the volume of a cube with edges $\frac{1}{2}$ inch is $\frac{1}{8}$ cubic inch.	25

### Use these skills to solve problems 1–6.

- 1 There are 25 desks in a classroom. Each desktop is the same as the one shown below.

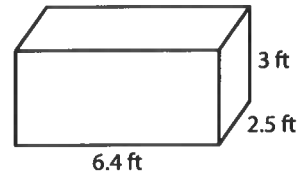


What is the total area of all of the desktops?

**Show your work.**

Solution: \_\_\_\_\_  
\_\_\_\_\_

- 2 A fish tank has the shape of a rectangular prism with dimensions as shown. The tank is open at the top.



How much glass was used to make the tank?

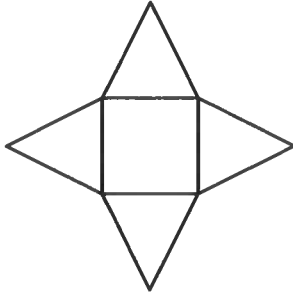
**Show your work.**

Solution: \_\_\_\_\_  
\_\_\_\_\_



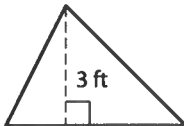
Solve.

- 3 What three-dimensional figure does the net represent?



- A square pyramid
- B rectangular prism
- C triangular prism
- D cube

- 4 The area of the triangle is 24 square feet. What is the length of the base?

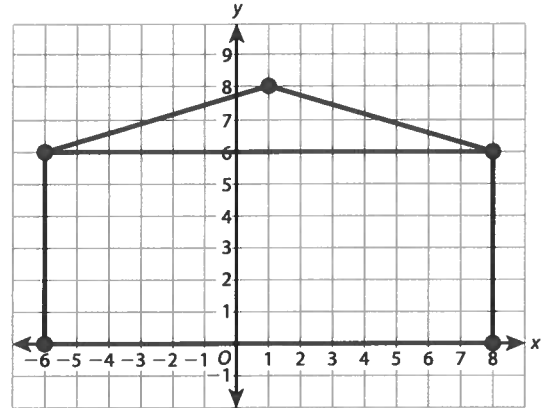


- A 8 feet
- B 16 feet
- C 21 feet
- D 36 feet

- 5 Mildred has two cubes. The length of one side of the smaller cube is half the length of one side of the larger cube. How many of the smaller cubes would it take to fill the larger cube?

- A 2
- B 6
- C 8
- D 12

- 6 Henry drew a diagram of the front of his house on a coordinate plane.



**Part A:** What is the area of the front of Henry's house on the diagram?

**Part B:** There is a window with vertices at  $(-4, 2)$ ,  $(-4, 4)$ ,  $(-2, 2)$ , and  $(-2, 4)$ . There is a second window with vertices at  $(4, 1)$ ,  $(4, 5)$ ,  $(6, 1)$ , and  $(6, 5)$ . The front door has vertices at  $(-1, 0)$ ,  $(-1, 3)$ ,  $(1, 3)$ , and  $(1, 0)$ . Henry wants to paint the front of his house, but not the windows or the door. He drew the diagram so that 1 square unit = 9 square feet. What is the area that Henry wants to paint?

**Show your work.**

*Solution:* \_\_\_\_\_

\_\_\_\_\_

## Statistics and Probability

In this unit you learned to:	Lesson
recognize what makes a question a statistical question.	26
calculate measures of center such as mean and median.	27
calculate measures of spread such as range and mean absolute deviation.	27
display data accurately with a dot plot, histogram, or box plot.	28
describe data using measures of center and measures of spread.	29

### Use these skills to solve problems 1–6.

- 1** You ask 20 students from the same class one of the survey questions below. Which question is a statistical question? Select all that apply.
- A** What was the highest score on the last math test?
  - B** How long did you spend studying for the test?
  - C** How many problems were on the last math test?
  - D** What is your favorite subject?

- 2** Which of these can be determined from a box plot? Select all that apply.
- A** mean
  - B** median
  - C** mode
  - D** range
  - E** interquartile range
  - F** mean absolute deviation

- 3** Create a set of six data values such that the mode is 6, the median is 6.5, and the mean is 7.
- \_\_\_\_\_

- 4** For which data set is the median a better measure of center than the mean?
- A** 13, 14, 16, 16, 17, 18, 20
  - B** 4, 12, 15, 16, 17, 19, 21
  - C** 11, 13, 14, 15, 18, 19, 20
  - D** 8, 10, 12, 14, 16, 18, 20

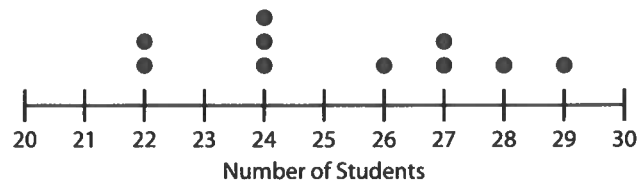


**Solve.**

**5** Answer the questions about a histogram. Select *Yes* or *No*.

- a. Is a histogram more useful than a dot plot to show data with a very large range?  Yes  No
- b. Should each interval included in the histogram be the same size?  Yes  No
- c. Is it always possible to find the mean using a histogram?  Yes  No
- d. Is it always possible to find the median using a histogram?  Yes  No
- e. Is it always possible to find the mode using a histogram?  Yes  No
- f. Is it always possible to find the maximum and minimum values using a histogram?  Yes  No

**6** The dot plot shows the number of students in different classrooms in East School.



Select whether each statement is *True* or *False*.

- a. There are 9 data values in the set.  True  False
- b. The median is 25.  True  False
- c. The mode is 24.  True  False
- d. The mean is 25.3.  True  False
- e. The mean absolute deviation is 2.24.  True  False
- f. The interquartile range is 3.  True  False