

5.1 Ratios (online textbook pgs. 190-195)

A) Write the ratio for the following situation in three different ways.

For every 5 seats, there are 4 fans.

B) You and a friend tutor for 18 hours. Use the tape diagram to find how many hours you tutor.

You

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Friend

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C) Twelve of 28 students in a class have a dog. What is the ratio of students who have a dog to students who do not?

D) In the continental United States, the ratio of states that border an ocean to states that do not border an ocean is 7:9. How many of the states border an ocean?

E) The ratio of offensive players to defensive players on a football team is 4:3. There are 21 defensive players on the team. How many offensive players are there?

F) The ratio of the side lengths of a triangle is 2:3:4. The shortest side is 15 inches. What is the perimeter?

G) The table shows the number of stamps in a new stamp collection. Use ratio language to compare the number of celebrity stamps to the total number of stamps.

Topic	Birds	Celebrity	Horses	Ships
Stamps	7	14	5	9

H) During a game of checkers, there are 16 pieces left. The ratio of black to red is 3:5. How many black pieces are on the board?

Explain how you found your answer.

5.3 Rates (online textbook pgs. 204-209)

A) Write a unit rate for the situation.

54 necklaces in 3 hours

B) Write a unit rate for the situation.

1080 miles on 15 gallons

C) Decide whether the rates are equivalent.

24 laps in 6 minutes.
60 laps in 15 minutes

D) Decide whether the rates are equivalent.

15 breaths every 36 seconds
90 breaths every 3 minutes

E) Twenty cars go past your house during a 5-minute period. At that rate, how many cars will go past your house during a 15-minute period?

- A. 45
- B. 60
- C. 75
- D. 300

F) Chloe rode her bike from her house to the library in 4 minutes. The library is 1 mile from her house.

What is Chloe's speed in miles per hour? Show your work and explain your reasoning.

G) Lightning strikes Earth 1000 times in 10 seconds. How many times does lightning strike per second?

H) You earn \$35 for washing 7 cars. How much do you earn for washing 4 cars?

5.2 Ratio Tables (online textbook pgs. 196-203)

A) Find the missing value(s) in the ratio table.

Towels	14	7	
Blankets	8		16

B) Find the missing value(s) in the ratio table.

Forks	16	8	
Spoons	10		30

C) Describe and correct the error.

A	3	8	13
B	7	12	17

D) The ratio of three numbers is 4:3:1. The sum of the numbers is 64. What is the greatest number?

E) The ratio of the number of giraffes to monkeys in a zoo is 2 to 5. Which statement could be true?

- A. For every giraffe, there are 10 monkeys.
- B. For every 10 giraffes, there is 1 monkey.
- C. For every 4 giraffes, there are 10 monkeys.
- D. For every 10 giraffes in the zoo, there are 4 monkeys.

How do you know?

F) The table shows the number of children's life jackets and the number of adult life jackets in different packages.

Number of Children's Size	Number of Adult Size
2	6
4	12
7	21

Which two ratios are equivalent?

- A. 28:32 and 31:35
- B. 11:22 and 16:32
- C. 13:27 and 22:36
- D. 10:30 and 17:51

G) Katie's goal is to read 6 books every 3 months. Based on this goal, how many months will it take Katie to read 24 books?

- A. 4
- B. 8
- C. 12
- D. 18

How do you know?

H) Jan's daily workout routine includes 49 minutes of running on the treadmill and 21 minutes of jumping rope. What is the ratio of the number of minutes running on the treadmill to jumping rope in Jan's daily exercise routine?

- A. 5:7
- B. 7:3
- C. 9:7
- D. 3:7

5.4 Comparing and Ordering Ratios (online textbook pgs. 210-215)

A) Which is the better buy?

Cheese	A	B
Cost (dollars)	3.59	5.12
Slices	10	16

B) Which car gets the better gas mileage?

Car	A	B
Distance (mi.)	360	270
Gallons Used	20	18

C) Salt water gargle can temporarily relieve a sore throat. One recipe calls for $\frac{3}{4}$ tsp. of salt in 1 cup of water. A second recipe calls for 1 tsp. of salt in 2 cups of water. Which recipe tastes saltier?

D) In whole milk, 13 parts out of 400 are milk fat. In 2% milk, 1 part out of 50 is milk fat. Which type of milk has more milk fat per cup?

E) Complete the ratio tables and graph the ordered pairs from the tables.

Zoo	
People	Cost (dollars)
4	60
8	
12	
16	

Museum	
People	Cost (dollars)
5	95
10	
15	
20	

What can you conclude?

F) A chemist prepares two acid solutions. Solution 1 is 3 parts sulfuric acid to 7 parts water. Solution 2 is 4 parts sulfuric acid to 9 parts water. Use a ratio table to determine which solution is more acidic.

G) Complete the ratio tables and graph the ordered pairs from the tables.

Water Tank	
Time (min.)	Liters Leaked
2	4
4	
6	
8	

Swimming Pool	
Time (min.)	Liters Leaked
3	2
6	
9	
12	

What can you conclude?

H) A horse's heart beats 440 times in 10 minutes. A cow's heart beats 390 times in 6 minutes. Which animal has a greater heart rate?

How do you know?

7.4 Writing Equations in Two Variables (online textbook pgs. 314-321)

A) Tell whether the ordered pair is a solution of the equation.

$$y = 7x + 2; (2, 0)$$

B) List the independent and dependent variables.

The equation $A = 25w$ gives the area A (in ft.^2) of a rectangular dance floor with a width of w feet.

C) A cheese pizza costs \$5. Additional toppings cost \$1.50 each. Write and graph an equation in two variables that represent the total cost of a pizza.

D) Fill in the blank so that the ordered pair is a solution of the equation.

$$y = 22 - 9x; (\text{ ____ }, 4)$$

E) For every 6 inches of border around a bulletin board, 2 pushpins are used. Which statement about the dependent variable in the relationship is true.

A. The length of border is the dep. var. because it is determined by the number of pushpins used.

B. The length of border is the dep. var. because it is not determined by the number of pushpins used.

C. The number of pushpins is the dep. var. because it is determined by the length of border used.

D. The number of pushpins is the dep. var. because it is not determined by the length of border used.

F) The temperature in Dylan's freezer ($^{\circ}\text{F}$), over several hours is shown in the graph.

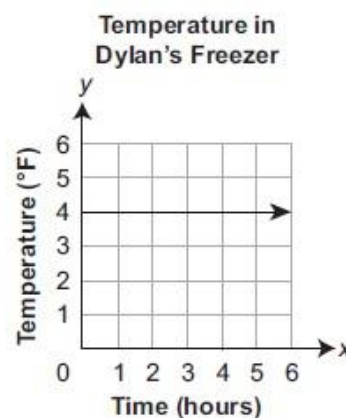
Which equation can be used to determine the temperature of Dylan's freezer?

A. $x = 4$

B. $y = 4$

C. $x = y + 4$

D. $y = x + 4$



G) Write an equation in two variables that has $(3, 4)$ as a solution.

H) You walk 5 city blocks in 12 minutes. How many city blocks can you walk in 2 hours?

Could you write a different equation?

5.5 Percent (online textbook pgs. 218-223)

A) Write the percent as a fraction or mixed number in simplest form.

15%

B) Write the percent as a fraction or mixed number in simplest form.

224%

C) Write the fraction or mixed number as a percent.

$\frac{1}{5}$

D) Write the fraction or mixed number as a percent.

$1\frac{41}{50}$

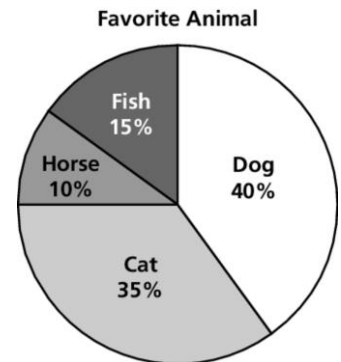
E) Find the percent.

9 is what percent of 16?

F) A survey asked 80 students to name their favorite animal. The results are shown in the circle graph.

You survey 20 more students. How many do you expect to say cats are their favorite animal?

- A. 7
- B. 8
- C. 12
- D. 28



G) A school fundraiser raised 120% of its goal last year and 125% of its goal this year. Did the fundraiser raise more money this year?

Explain your reasoning.

F) Roberto is finding the percent of a number. His work so far is shown in the box below. What should Robert do in order to complete his work correctly?

$$\begin{aligned} 5\% \text{ of } 12 &= 0.5 \times 12 \\ &= 6 \end{aligned}$$

- A. Change 0.5 to 0.05
- B. Change 0.5 to 5
- C. Divide 12 by 0.5 instead of multiplying 12 by 0.5.
- D. Divide 12 by 5 instead of multiplying 12 by 0.5.

5.6 Solving Percent Problems (online textbook pgs. 224-231)	
<p>A) Find the percent of the number.</p> <p style="text-align: center;">40% of 60</p>	<p>B) Describe the correct the error.</p> <p style="text-align: center;">40% of 75 = 40% x 75 = 3000</p>
<p>C) Find the whole.</p> <p style="text-align: center;">15% of what number is 12?</p>	<p>D) Find the whole.</p> <p style="text-align: center;">175% of what number is 42?</p>
<p>E) You win an online auction for concert tickets for \$120. Your winning bid is 60% of your maximum bid. How much were you willing to pay for the tickets?</p> <p>A. \$72</p> <p>B. \$80</p> <p>C. \$120</p> <p>D. \$200</p> <p>Explain.</p>	<p>F) To cover increasing costs, Mr. Ochaeta is marking up all the prices of the items in his sporting goods store by the same percent. A basketball that costs \$40 is marked up to a new price of \$45. By what percent did Mr. Ochaeta mark up the prices?</p> <p>A. 1.25%</p> <p>B. 88.8%</p> <p>C. 8%</p> <p>D. 12.5%</p>
<p>G) Su bought 12 cases of new plates for a diner, which is 30% of the total number of cases of plates in the diner. How many cases did the diner have in all?</p> <p>A. 4 cases</p> <p>B. 3.6 cases</p> <p>C. 40 cases</p> <p>D. 360 cases</p>	<p>H) When a farmer harvests chicken eggs, he expects 2% of the eggs to be cracked. How many eggs would the farmer expect to be cracked when harvesting 350 eggs?</p> <p>A. 3</p> <p>B. 7</p> <p>C. 18</p> <p>D. 170</p>

5.7 Converting Measures (online textbook pgs. 232-237)

A) Complete the statement. Round to the nearest hundredth if necessary.

$$4 \text{ ft.} \approx \underline{\hspace{1cm}} \text{ m}$$

B) Complete the statement. Round to the nearest hundredth if necessary.

$$17 \text{ kg} \approx \underline{\hspace{1cm}} \text{ lb.}$$

C) Complete the statement using < or >.

$$10 \text{ in.} \underline{\hspace{1cm}} 200 \text{ mm}$$

D) Complete the statement using < or >.

$$1200 \text{ g} \underline{\hspace{1cm}} 5 \text{ lb.}$$

E) One liter of paint covers 100 square feet. How many gallons of paint does it take to cover a room whose walls have an area of 800 square meters?

F) The speed of light is about 300,000 kilometers per second. Convert the speed to miles per hour.

G) Can you pour the water from a full 2-liter bottle into a 2-quart pitcher without spilling any?

Explain.

H) The Mackinac Bridge in Michigan is the third-longest suspension bridge in the United States. If the height above the water is 199 ft., how high above the water is the roadway in meters?