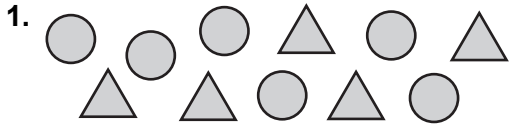


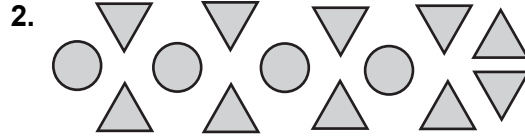
# 5.1

## Practice B

Write the ratio. Explain what the ratio means.

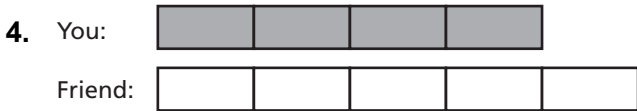


circles to triangles



triangles to circles

You and a friend tutor a total of 18 hours. Use the tape diagram to find how many hours you tutor.



5. In a recipe, the ratio of fluid ounces of water to fluid ounces of tomato paste is 3 : 4. You plan to make 35 fluid ounces of sauce. How many fluid ounces of tomato paste do you need?
6. A middle school band has 45 sixth and seventh graders. The ratio of sixth graders to seventh graders is 2 to 3. How many sixth graders are in the band? Explain how you got your answer.
7. The ratio of the ages (in years) of three children is 2 : 4 : 5. The sum of their ages is 33. What is the age of each child?
8. You make a necklace using blue, purple, and green beads in a ratio of 1 : 1 : 2. You use a total of 168 beads. How many green beads are in the necklace?
9. A caterer makes 3 extra sandwiches for every 20 sandwiches a customer orders.
  - a. Write the ratio of ordered sandwiches to extra sandwiches.
  - b. The caterer makes a total of 184 sandwiches for a customer. How many sandwiches did the customer order?

# 5.2

## Practice B

Find the missing value in the ratio table. Then write the equivalent ratios.

1.

Flutes	Clarinets
10	8
5	
	16

2.

Green	Blue
12	16
	4
36	

Complete the ratio table to solve the problem.

3. You baked 42 chocolate cupcakes and 28 red velvet cupcakes. You package them in boxes that have the same ratio of chocolate to red velvet as the total cupcakes. How many red velvet cupcakes are in a box that has 24 chocolate cupcakes?

Chocolate	Red Velvet
42	28
24	

4. The number of free song downloads is determined using a ratio. When you purchase 40 songs, you get 24 free song downloads. How many songs must you purchase in order to get 18 free song downloads?

Purchase	Free
40	24
	18

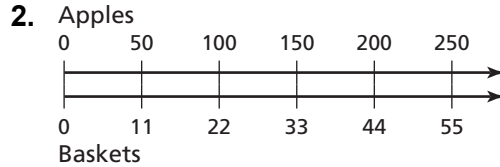
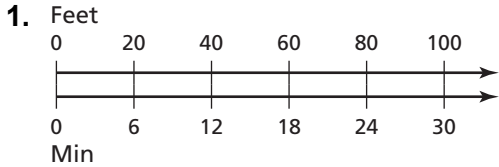
5. Describe and correct the error in making the ratio table.

X	<b>A</b>	<b>B</b>
	64	32
	56	24
	48	16

# 5.3

## Practice B

Write a rate that represents the situation.



Write a unit rate for the situation.

- 3. 6 kittens in 3 boxes
- 4. \$96 for 16 hours of work
- 5. 72 biscuits from 9 batches
- 6. 1800 revolutions in 50 seconds

Decide whether the rates are equivalent.

- 7. 35 kilometer in 25 minutes,  
14 kilometers in 10 minutes
- 8. 25 minutes for \$3,  
1 hour for \$6
- 9. An aquarium is leaking water at a rate of three quarts per day. How many fluid ounces of water is this each hour?
- 10. A glacier flows at a rate of 20 meters per day. What is the flow rate in kilometers per year?
- 11. A teacher keeps track of how many books are read by students in each class. Which grade has read a higher rate of books per student? How many more books does the other grade need to read to have the same rate?

	Grade 6		Grade 7	
	Class A	Class B	Class C	Class D
Students	25	31	21	23
Books Read	181	155	116	126

- 12. Charles Lindbergh made the first solo airplane flight from New York to Paris. His flight covered about 3610 miles in 33.5 hours.
  - a. Find the unit rate in miles per hour.
  - b. Find the unit rate in hours per mile.
  - c. Which is a better description of Lindbergh’s rate, *about two miles per minute* or *about two minutes per mile*? Explain your reasoning.

## 5.4 Practice B

Determine which car gets the better gas mileage.

1.

Car	A	B
Distance (miles)	510	550
Gallons used	18	20

2.

Car	A	B
Distance (miles)	460	430
Gallons used	35	32

Determine which is the better buy.

3.

Tissues	A	B
Cost (dollars)	4.50	3.25
Boxes	5	3

4.

Frozen Waffles	A	B
Cost (dollars)	2.29	3.59
Waffles	8	12

Complete the ratio tables and graph the ordered pairs from the table. What can you conclude?

5.

Ranch Dressing	
Tablespoons	Milligrams of Sodium
4	580
8	
12	
16	

Ketchup	
Tablespoons	Milligrams of Sodium
3	400
6	
9	
12	

6. The deli offers a fruit salad with 5 blueberries for every 3 pieces of cantaloupe. The deli changes the mixture to have 6 blueberries for every 4 pieces of cantaloupe, but the number of pieces of fruit in the salad does not change.
- Create a ratio table for each salad. How many blueberries are in the smallest possible salad?
  - Blueberries cost less than cantaloupe. Should the company charge more or less for the new salad? Explain your reasoning.

## 5.5 Practice B

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

1. 35%                      2. 81.4%                      3. 210%                      4. 0.8%

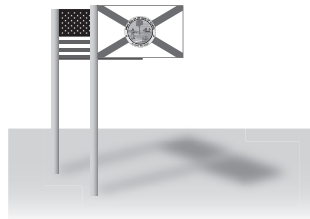
Write the fraction or mixed number as a percent.

5.  $\frac{37}{50}$                       6.  $\frac{21}{25}$                       7.  $\frac{3}{16}$                       8.  $\frac{19}{40}$
9.  $3\frac{1}{4}$                       10.  $2\frac{1}{2}$                       11.  $1\frac{4}{5}$                       12.  $5\frac{7}{50}$

Find the percent.

13. 12 is what percent of 40?                      14. 6 is what percent of 16?
15. On a school bus, 22 of the 40 students are in window seats. What fraction of the students are in window seats?
16. You and a friend are selling lemonade. You sell three times as many cups as your friend. What percent of the cups sold were sold by your friend? Explain.

17. The United States flag is actually 105% as tall as the state flag of Florida. Write this percent as a mixed number and explain why the perspective in the figure may be misleading.



18. At a zoo, an anaconda is 118% as long as a Burmese python and  $1\frac{3}{20}$  times as long as a reticulated python. Which is longer, the Burmese python or the reticulated python? Explain.

19. Copy the square. Then draw another square with sides that are  $\frac{1}{2}$  as long. What percent of the area of the original square is the area of the smaller square?



20. The weight of a tree is doubling every 3 years. In how many years will the weight of the tree be 1600% of its weight now?

## 5.6 Practice B

Find the percent of the number. Explain your method.

1. 60% of 40
2. 10% of 80
3. 25% of 70
4. 15% of 30
5. 6% of 15
6. 65% of 60
7. 78% of 81
8. 14% of 106
9. 160% of 75
10. 230% of 45
11. 514% of 205
12. 115% of 130


Copy and complete the statement using  $<$ ,  $>$ , or  $=$ .

13. 55% of 60 ? 60% of 65
14. 20% of 80 ? 80% of 20
15. 36% of 150 ? 27% of 200
16. 110% of 3 ? 0.9% of 300
17. How many hours is 75% of 3 days?
18. How many feet is 20% of 4 miles?
19. A restaurant serves you a 16-fluid ounce glass of juice that is 30% ice. How many fluid ounces of juice do you actually get?
20. The table shows the grading scale for one of your classes.

<b>Letter grade</b>	A	B	C	D
<b>Percent range</b>	90–100%	80–89%	70–79%	60–69%

Tell the letter grade that you earn for each score.

- a. You earn 14 out of a possible 20 points on a quiz.
- b. You earn 66 out of a possible 80 points on a test.
- c. You earn 216 out of a possible 250 points for a report.
21. A 15% discount saves you \$5 off the price of an electronic game. How much do you save off the regular price if the discount is raised to 45%? Explain your reasoning.
22. Draw two different rectangles with perimeters that are each 80% of the perimeter of the rectangle shown. Show the length and width of each rectangle.
 


23. A monitor that regularly costs \$100 is on sale for 15% off. The salesperson offers you 20% off the sale price. What percent of the original price is the salesperson's price?
24. A store pays a manufacturer \$20 for a hat. To make a profit, the store prices the hat 60% higher than the amount they paid. Later, a sale reduces the price of the hat by 10%. Finally, a clearance sale reduces the sale price by 40%. What is the clearance price? Will this price give the store a profit?

**5.7 Practice B**

Copy and complete the statement. Round to the nearest hundredth, if necessary.

1. 7 qt =   ? gal
  2. 3 km =   ? m
  3. 30 oz  $\approx$    ? lb
  4. 5.9 in.  $\approx$    ? cm
  5. 51 km  $\approx$    ? mi
  6. 14.5 oz  $\approx$    ? g
  7. 120.5 lb  $\approx$    ? kg
  8. 7.25 L  $\approx$    ? qt
  9. 1150 cm  $\approx$    ? in.
10. Your cat weighs 10.4 pounds. How many kilograms does your cat weigh?

Copy and complete the statement using  $<$  or  $>$ .

11. 29 ft   ? 880 cm
12. 10 pt   ? 5 L
13. 42 km   ? 26.2 mi
14. 350 g   ? 12 oz

Copy and complete the statement.

15. 42 gal/min  $\approx$    ? L/min
  16. 32 ft/sec  $\approx$    ? m/sec
  17. 15 kg/yr  $\approx$    ? oz/yr
  18. 5.7 km/h  $\approx$    ? ft/h
19. The An-225 airplane is quoted as having a maximum takeoff weight of over 1.3 million pounds.
- a. What is this weight in kilograms?
  - b. The FAI, the world governing body for air sports and aeronautical world records, attributes a slightly lower weight of 1.12 million pounds. Convert this to kilograms.
  - c. The record in part (b) was set by an An-225 in 1989 for the largest mass ever lifted by an airplane to an altitude of 6500 feet. Convert this altitude to kilometers.
20. At the equator, Earth's surface moves about 4000 kilometers per day.
- a. What is this speed in miles per hour?
  - b. What is this speed in meters per minute?
  - c. You stand at a place 200 miles north of the equator. Are you moving *more than* or *less than* 4000 kilometers per day?
21. Your car's gasoline tank holds 18 gallons of gasoline. On a trip in Canada, the tank is one quarter full. You want to fill the tank. How many liters of gasoline are needed to fill the tank? Explain your answer.