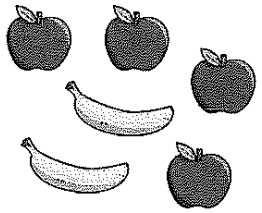
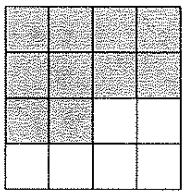
Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
What is a **RATIO?**	➢ A ratio is a Comparison of two values. ➢ Ratios can compare *part-to-part*, *part-to-whole*, or *whole-to-part*.
	Example: The ratios below describe relationships among the pieces of fruit to the right. • 2 bananas to 4 apples • 4 apples to 6 pieces of fruit • 6 pieces of fruit to 2 bananas 
Writing **RATIOS** 	Given quantity a and quantity b, the ratio of a to b can be written in **three ways**: a:b , a to b , $\frac{a}{b}$
	Using the diagram to the left, write each ratio in two different ways.
	1. shaded squares to unshaded squares: 10:6 , $\frac{10}{6}$
	2. unshaded squares to total squares: 6:16 , 6 to 16
	3. total squares to shaded squares: 16 to 10 $\frac{16}{10}$
	4. unshaded squares to shaded squares: $\frac{6}{10}$; 6:10
Simplifying **RATIOS**	**Like fractions, ratios can be written in simplest form.**
	Simplifying Fractions Review: • Find the greatest common factor of the numerator and denominator. • Divide both the numerator and denominator by this number. **Example:** Simplify $\frac{8}{12}$ GCF: 4 $\frac{\div 4}{\div 4} = \boxed{\frac{2}{3}}$
	Write each ratio in simplest form in two different ways.
	5. 6 red bows to 12 green bows $\frac{6}{12} \frac{\div 6}{\div 6} = \frac{1}{2}$ 1:2 , 1 to 2
	6. 15 horses to 20 cows $\frac{15}{20} \frac{\div 5}{\div 5} = \frac{3}{4}$ 3:4 , 3 to 4

7. 20 children to 4 adults

$\frac{20}{4} = \frac{5}{1}$ 5:1 5 to 1

8. 14 nurses to 6 doctors

$\frac{14}{6} = \frac{7}{3}$ 7:3 7 to 3

9. 16 quarters to 72 pennies

$\frac{16}{72} = \frac{2}{9}$ 2:9 2 to 9

10. 18 necklaces to 15 bracelets

$\frac{18}{15} = \frac{6}{5}$ 6:5 6 to 5

11. vowels to consonants in the word **DICTIONARY**

$\frac{4}{6} = \frac{2}{3}$ 2:3 2 to 3

12. girls to total number of students in our class

* answers will vary

APPLICATIONS

13. Out of 75 students, 36 buy their lunch. What is the ratio of students who buy their lunch to students who bring a lunch in simplest form?

$\frac{36}{39} = \frac{12}{13}$ 12:13

14. This week, Arielle worked 16 hours at the grocery store and 24 hours at the library. Write a ratio of the number of hours she worked at the library to the total number of hours she worked in simplest form.

$\frac{24}{40} = \frac{3}{5}$ 3:5

Activity	Miles
Run	15
Walk	7
Cycle	28

15. The table to the left shows the number of miles Joe ran, walked, and cycled last week. Give the ratio of the number of miles he ran to the total number of miles in simplest form.

$\frac{15}{50} = \frac{3}{10}$ 3:10

Packers:
$2x - 4$
$2(16) - 4$
$= 28$

16. In their last game, the Packers scored four less than twice the number of points that the Seahawks scored. If the Seahawks scored 16 points, write a ratio for the number of points scored by the Seahawks to the number of points scored by the Packers in simplest form.

$\frac{16}{28} = \frac{4}{7}$ 4:7

17. A jar contains 13 pennies, 9 nickels, 10 dimes, and 8 quarters. What is the ratio of coins worth at least 10¢ to the total number of coins?

$\frac{18}{40} = \frac{9}{20}$ 9:20

1 (2) (3) 4 (5) 6
(7) 8 9 10 (11) 12
(13) 14 15 16 (17)
18 (19) 20

18. A bag contains 20 slips of paper, numbered 1-20. What is the ratio of prime to total numbers in simplest form?

$\frac{8}{20} = \frac{2}{5}$ 2:5

Name: _____ **Unit 6:** Proportional Relationships

Date: _____ **Per:** _____ **Homework 1:** Ratios

Directions: Write each ratio in **simplest form** in two different ways.

1. 18 doors to 8 stairways

$\frac{18}{8} = \frac{9}{4}$ 9:4 9 to 4

2. 42 wins to 63 losses

$\frac{42}{63} = \frac{2}{3}$ 2:3 2 to 3

3. 36 watermelons to 45 cantaloupes

$\frac{36}{45} = \frac{4}{5}$ 4:5 4 to 5

4. 12 trumpet players to 108 band members

$\frac{12}{108} = \frac{1}{9}$ 1:9 1 to 9

5. 52 red paperclips to 24 blue paperclips

$\frac{52}{24} = \frac{13}{6}$ 13:6 13 to 6

6. 35 newspapers to 84 magazines

$\frac{35}{84} = \frac{5}{12}$ 5:12 5 to 12

Use for questions 7-10:
Jordan is playing a game using the letter tiles below. Each tile has a point value in the lower right corner. Find each ratio in simplest form.

M$_3$	A$_1$	F$_4$	C$_3$
E$_1$	T$_1$	W$_4$	Z$_{10}$
U$_1$	H$_4$	M$_3$	K$_5$

7. vowels to consonants

$\frac{3}{9} = \frac{1}{3}$

8. consonants to total letters

$\frac{9}{12} = \frac{3}{4}$

9. at least 4 points to total letters

$\frac{5}{12}$

10. total letters to M's

$\frac{12}{2} = \frac{6}{1}$

11. Amelia walked for 12 minutes then ran for 32 minutes. What is the ratio for the time she spent walking to the time she spent running?

$\frac{12}{32} = \frac{3}{8}$

12. Rashad took a test with 75 multiple-choice questions. If he got 9 questions incorrect, what is the ratio of the questions he got correct to the questions he got incorrect?

$\frac{66}{9} = \frac{22}{3}$

13. A jar contains 18 red, 12 blue, 20 yellow, and 14 green marbles. What is the ratio of blue marbles to the total number of marbles?

$\frac{12}{64} = \frac{3}{16}$

14. A hockey player scored 16 goals in the 72 games he played in. What is the ratio of goals to games played?

$\frac{16}{72} = \frac{2}{9}$

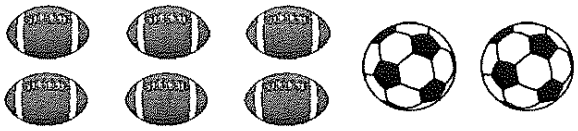
15. There are 28 boys and 36 girls on a school bus. If 6 boys and 4 girls get off the bus at the next stop, what will be the ratio of girls to total students?

$\frac{32}{54} = \frac{16}{27}$

16. Sydney is 6 years younger than her brother Jack. If Jack is 18 years old, what will be the ratio of Jack's age to Sydney's age in 3 years?

$\frac{21}{15} = \frac{7}{5}$

Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
EQUIVALENT *Ratios*	• Ratios that name the same relationship are called **equivalent ratios.** • Equivalent ratios can be found by: ➢ **Scaling Up** (multiplying both numbers by the same number), or ➢ **Scaling Down** (dividing both numbers by the same number) • **Example:** Lucinda mixed 6 cups of apple juice with 4 cups of cranberry juice to make apple-cranberry juice. Write three equivalent ratios for the amount of apple juice to the amount of cranberry juice. $\frac{6}{4} \div \frac{2}{2} = \boxed{\frac{3}{2}}$ $\frac{6}{4} \times \frac{3}{3} = \boxed{\frac{18}{12}}$ $\frac{6}{4} \times \frac{7}{7} = \boxed{\frac{42}{28}}$
Writing **EQUIVALENT RATIOS**	**For questions 1 and 2, using the picture below, write three equivalent ratios to describe each comparison.** 
1. soccer balls to footballs $\frac{2}{6}, \frac{1}{3}, \frac{4}{12}$	**2.** footballs to total number of balls $\frac{6}{8}, \frac{3}{4}, \frac{9}{12}$
Write two equivalent ratios for each given ratio.	
3. 16 to 12 8 to 6 4 to 3	**4.** 2 to 7 4 to 14 6 to 21
5. 5:30 1 : 6 10 : 60	**6.** 48:18 8 : 3 24 : 9
7. $\frac{15}{12}$ $\frac{5}{4}, \frac{30}{24}$	**8.** $\frac{36}{8}$ $\frac{9}{2}, \frac{18}{4}$

FINDING VALUES

Fill in the box with a number that will make the ratios equivalent.

9. $\frac{1}{4}, \frac{5}{\boxed{20}}$

10. $\frac{7}{3}, \frac{\boxed{56}}{24}$

11. $\frac{12}{40}, \frac{3}{\boxed{10}}$

12. $\frac{\boxed{9}}{5}, \frac{18}{10}$

13. $\frac{14}{\boxed{35}}, \frac{2}{5}$

14. $\frac{\boxed{24}}{45}, \frac{8}{15}$

APPLICATIONS

15. The ratio of the number of students to the number of chaperones on a field trip is 15:2. If there are 60 students, how many chaperones are there?

$\frac{15}{2} = \frac{60}{\boxed{8}}$ 8 Chaperones

16. Micah earns 2 points for every 3 questions he answers correctly on a test. If he answered 24 questions correctly, how many points did he earn?

$\frac{2}{3} = \frac{\boxed{16}}{24}$ 16 points

17. Corina makes $27 for every 2 hours that she works. If she worked 36 hours this week, how much money did she make?

$\frac{27}{2} = \frac{\boxed{486}}{36}$ $486

18. An 18-ounce bottle of soda contains 216 calories. If Sam drinks 6 ounces, how many calories will he consume?

$\frac{18}{216} = \frac{6}{\boxed{72}}$ 72 calories

19. The ratio of girls to boys in the sixth grade is 5:3. If there are 400 sixth graders, how many boys are there?

$\frac{8}{3} = \frac{400}{\boxed{150}}$ 150 boys

ARE THEY EQUIVALENT?

Ratios with the same simplest form are equivalent. Determine if the following ratios are equivalent.

20. 1 to 2; 6 to 12

1 to 2 ✓ Yes

21. 24 to 18; 20 to 15

4 to 3 ; 4 to 3 ✓ Yes

22. 3:7 and 9:28

No

23. 48:16 and 6:4

3:1 3:2 ✓ No

24. $\frac{4}{10}$ and $\frac{14}{35}$

$\frac{2}{5}$ $\frac{2}{5}$ ✓ Yes

25. $\frac{24}{72}$ and $\frac{4}{12}$

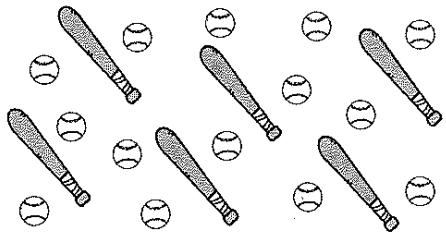
$\frac{1}{3}$ $\frac{1}{3}$ ✓ Yes

Name: _____ **Unit 6:** Proportional Relationships

Date: _____ **Per:** _____ **Homework 2:** Equivalent Ratios

1. Write three equivalent ratios to represent the ratio of baseballs to bats.

$\frac{14}{6}$, $\frac{7}{3}$, $\frac{28}{12}$



Directions: Write two equivalent ratios for each given ratio.

2. 3 to 1

6 to 2

9 to 3

3. 5:8

10 : 16

25 : 40

4. $\frac{48}{20}$

$\frac{12}{5}$, $\frac{24}{10}$

Directions: Fill in the box with a number that will make the ratios equivalent.

5. $\frac{3}{5}$, $\frac{9}{\boxed{15}}$

6. $\frac{54}{12}$, $\frac{\boxed{9}}{2}$

7. $\frac{\boxed{8}}{28}$, $\frac{2}{7}$

8. $\frac{5}{\boxed{12}}$, $\frac{35}{84}$

9. At the grand opening of an amusement park, every 3 out of 20 visitors receive a free ride ticket. How many people can expect a free ticket out of 100 visitors?

$\frac{3}{20} = \frac{\boxed{15}}{100}$

15 people

10. The ratio of drops of red food coloring to drops of yellow food coloring used to create orange frosting was 3:4. If 18 drops of red coloring were used, how many drops of yellow coloring were used?

$\frac{3}{4} = \frac{18}{\boxed{24}}$

24 drops

11. Jayce and Rylee are selling candy bars for a school fundraiser. Rylee sold 84 candy bars and raised $210. If Jayce raised $70, how many candy bars did he sell?

$\frac{84}{210} = \frac{\boxed{28}}{70}$

28 candy bars

12. There are 56 boys and 72 girls in an after-school club. The club is splitting the students in groups so that the ratio of boys to girls is the same as the ratio of boys to girls in the club. How many girls are in a group with 7 boys?

$\frac{56}{72} = \frac{7}{\boxed{9}}$

9 girls

Directions: Determine whether the ratios are equivalent.

13. 4 to 3; 24 to 21

8 to 7

NO

14. 7 to 9; 28 to 36

7 to 9

Yes

15. 63:28 and 18:8

9:4 9:4

Yes

16. 32:12 and 8:6

8:3 4:3

NO

17. $\frac{16}{25}$ and $\frac{32}{50} \rightarrow \frac{16}{25}$

Yes

18. $\frac{48}{42}$ and $\frac{9}{7}$

$\frac{8}{7}$

NO

Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

RATIO Tables

Equivalent ratios can be organized in a ratio table.

Give two equivalent ratios in the table below.

Boys	2	4	6
Girls	5	10	15

Complete each table with two equivalent ratios.

1.

Blueberries	Strawberries
8	3
16	6
24	9

2.

Tickets	Total Cost
12	$75
24	$150
48	$300

FINDING VALUES

Find the missing values in the ratio tables.

3.

Hot Dogs	Hamburgers
3	7
9	21
24	56

4.

Roses	Carnations
2	3
8	12
40	60

5.

Chips	Calories
4	48
12	144
36	432

6.

Lemonade (ounces)	Tea (ounces)
7.5	12
15	24
75	120

7.

Feet	Seconds
12	5
15	6.25
60	25

8.

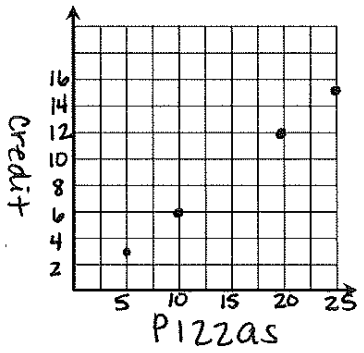
Pounds	Cost
4.5	$10
9	$20
22.5	$50

GRAPHING

Ratios

The pizzeria credits Remi's account $3 for every 5 pizzas she orders. Complete the ratio table below, then graph the ratios.

Pizzas	Credit
5	$3
10	$6
20	$12
25	$15



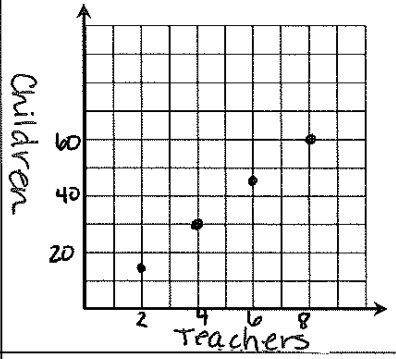
Questions:

1. How much credit will she have after ordering 15 pizzas? $9
2. How much credit will she have after ordering 40 pizzas? $24

Use the given information to complete a ratio table. Then graph the relationship.

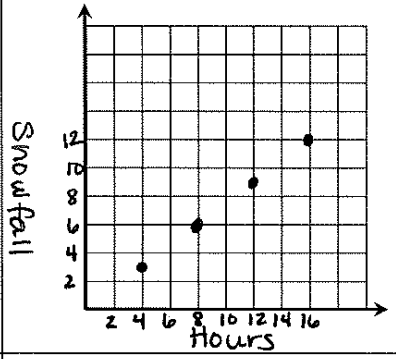
9. The ratio of teachers to children at a preschool is 2:15.

Teachers	2	4	6	8
Children	15	30	45	60



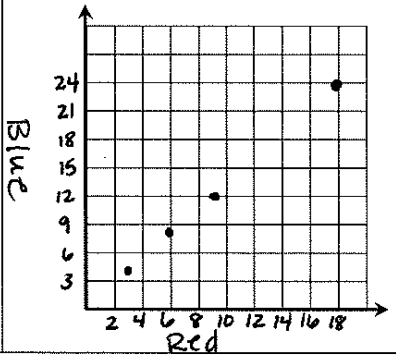
10. Snow is falling at a rate of 3 inches every 4 hours.

Hours	4	8	12	16
Snowfall (in)	3	6	9	12



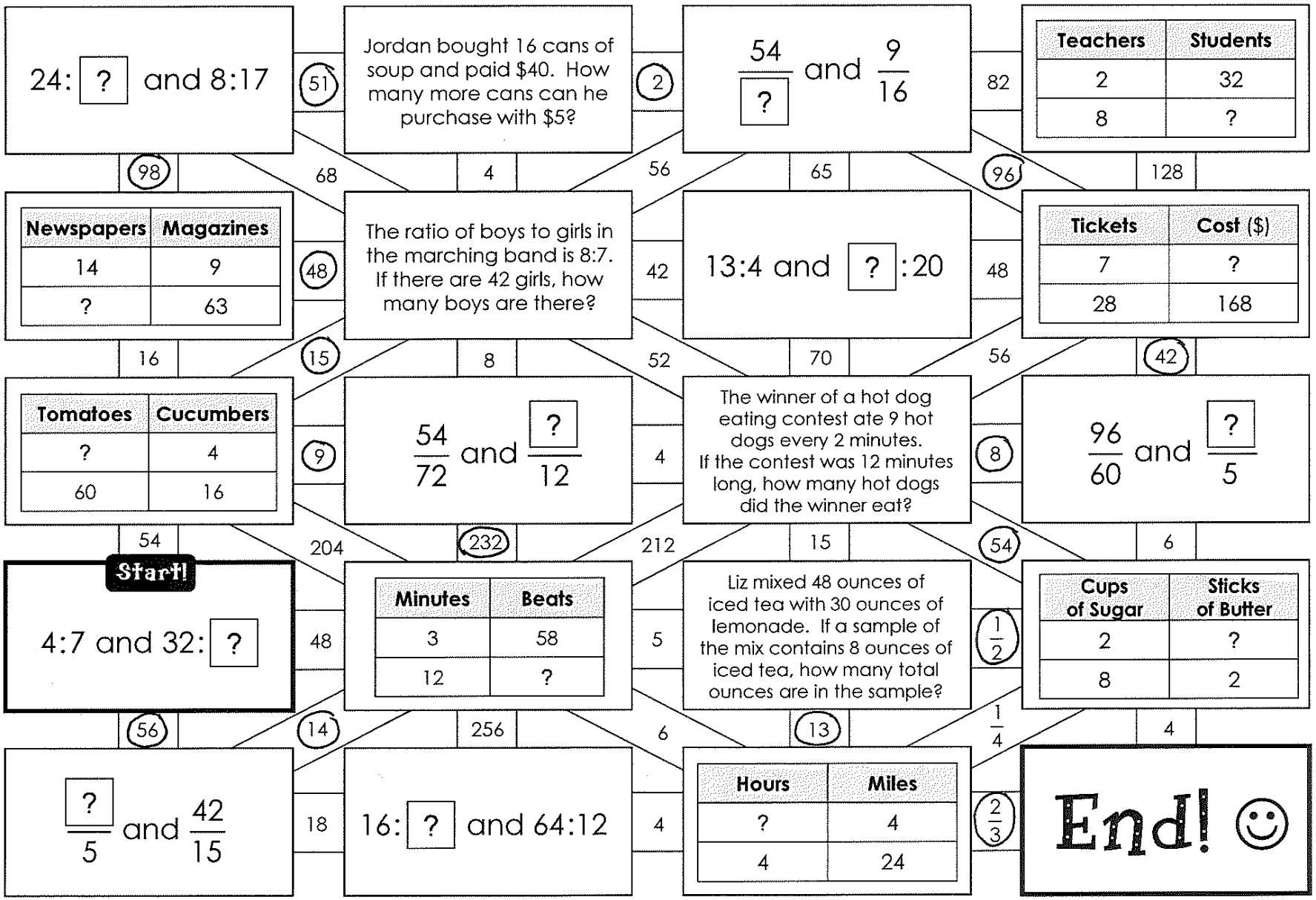
11. To create a shade of purple, Sonya mixed 18 ounces of red paint with 24 ounces of blue paint.

Red Paint (oz)	18	9	6	3
Blue Paint (oz)	24	12	8	4



Equivalent Ratios Maze!

Directions: Begin at the **Start** box. Find the missing value that makes the set of ratios equivalent. Use your solutions to navigate through the maze.



Name: _____ **Unit 6:** Proportional Relationships

Date: _____ Per: _____ **Homework 3:** Ratio Tables & Graphs

Directions: Find the missing values in each ratio table.

1.

Water Bottles	7	21	56
Soda Bottles	4	12	32

2.

Hours	2	4	12
Miles	50	100	300

3.

Minutes	3	12	60
Pages Read	10	40	200

4.

Apples	28	56	140
Apple Pies	3	6	15

5.

Red Roses	3	15	27
White Roses	7	35	63

6.

Minutes	4	2	6
Height (ft)	14	7	21

7.

Flour (c)	1.5	6	24
Sugar (c)	1	4	16

8.

Pencils	1	8	64
Cost ($)	0.50	4	32

Use the table below and following information to answer questions 9 and 10:
Sean makes $25 for every 2 lawns he mows.

Lawns	2	4	8
Earnings	$25	$50	$100

9. How much will he make for mowing 1 yard?

$12.50

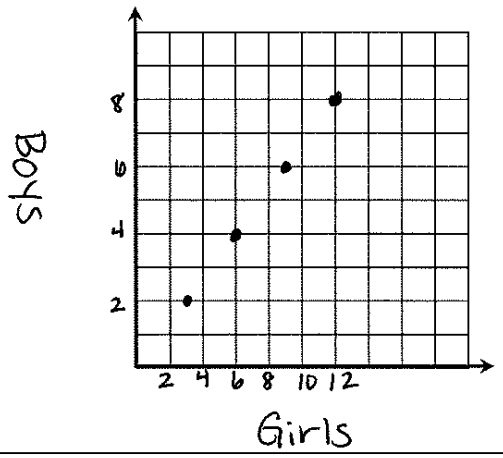
10. If he earned $200, how many yards did he mow?

16 yards

Directions: Create a table of ratios with the given information, then graph the relationship.

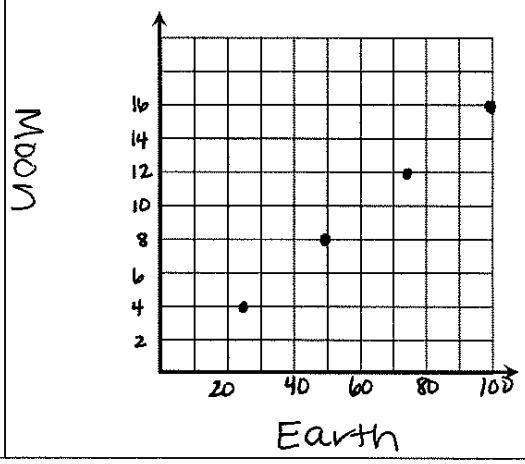
11. The ratio of girls to boys on a school bus is 3:2.

Girls	3	6	9	12	
Boys	2	4	6	8	



12. A person weighs approximately 4 pounds on the moon for every 25 pounds on Earth.

Earth Weight	25	50	75	100	
Moon Weight	4	8	12	16	



Name: _____ **Math 6**

Date: _____ **Per:** _____ **Unit 6:** Proportional Relationships

Quiz 6-1: Ratios & Equivalent Ratios

1. Give the ratio of hot dogs to hamburgers in three different ways. **Write each answer in simplest form.**

HB : 10
HD : 8

2. Given the letters of the phase **FOLLOW YOUR DREAMS**, what is the ratio of total number of letters to vowels? Give your answer in **simplest form.**

$\frac{16}{6}$

For questions 3 and 4: There are 12 red, 10 yellow, 8 green, and 18 blue markers in a pencil box. Give each ratio in **simplest form.**

3. red markers to yellow markers $\frac{12}{10}$

4. blue markers to total number of markers $\frac{18}{48}$

5. Marcus, Alaina, and Tory recorded the number of text messages they sent on a certain day. Marcus sent 24 text messages, Alaina sent 8 fewer messages than Marcus, and Tory sent twice as many messages as Alaina. What is the ratio of the number of texts that Tory sent to the total number of texts sent by all three friends?

M: 24
A: 16
T: 32

$\frac{32}{72}$

List two equivalent ratios for each given ratio.

6. 7:4

7. $\frac{16}{18}$

What value when filled in the box will make the ratios equivalent?

8. 6:2 and 42: ?

9. $\frac{20}{36}$ and $\frac{5}{?}$

10. $\frac{?}{45}$ and $\frac{8}{5}$

1.	4 to 5 4:5 4/5
2.	8:3
3.	6:5
4.	3:8
5.	4:9
6.	14:8, 21:12
7.	8/9, 32/36
8.	14
9.	9
10.	72

11. For every 3 minutes that Ryan runs on the treadmill, he burns 28 calories. How many calories can he expect to burn if he runs for 24 minutes?

$$\frac{3}{28} = \frac{24}{\boxed{224}}$$

12. Cassidy has a bag of 72 red beads and 90 blue beads. She would like use the beads to make bracelets that have the same ratio of red to blue beads as in the bag. If a bracelet has 15 blue beads, how many red beads does it have?

$$\frac{72}{90} = \frac{\boxed{12}}{15}$$

11.	224 cal.
12.	12 reds
13.	No
14.	Yes
15.	Yes

Determine whether the ratios are equivalent. (Answer yes or no)

13. 18 to 4; 32 to 6

↓ ↓

9 to 2 16 to 3

14. 15:27 and 5:9

↓

5:9

15. $\frac{28}{16}$ and $\frac{35}{20}$

↓ ↓

$\frac{7}{4}$ $\frac{7}{4}$

Complete each ratio table.

16.

Cranberries	18	36	90
Apples	5	10	25

17.

Plates	5	40	120
Bowls	2	16	48

18.

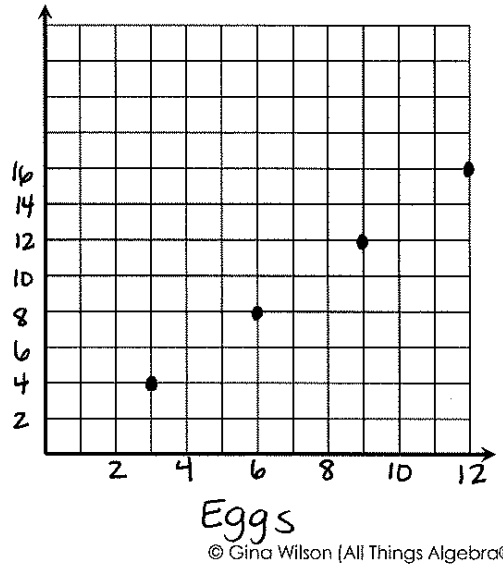
Students	8	24	72
Computers	3	12	27

19.

Salt (tsp)	2	4	20
Pepper (tsp)	1.5	3	15

20. A cookie dough recipe calls for 3 eggs for every 4 cups of flour. Create a ratio table, then graph the relationship.

Eggs	**Flour** (cups)
3	4
6	8
9	12
12	16



Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
RATE	A comparison of two quantities measured in different units. **Example:** 52 miles : 4 gallons
UNIT Rate Write rates using the **symbol:** / This is read as per	• A unit rate is a rate with a denominator of 1. • To change a rate to a unit rate, divide the first number of the ratio by the second number of the ratio.

Write each rate as a unit rate.

1. 75 miles driven in 3 hours

$\frac{75}{3}$ = 25 miles/hour

2. 40 bicycles sold in 8 hours

$\frac{40}{8}$ = 5 bicycles/hour

3. 228 students on 6 buses

$\frac{228}{6}$ = 38 students/bus

4. 144 words typed in 3 minutes

$\frac{144}{3}$ = 48 words/minute

5. 140 miles on 5 gallons of gas

$\frac{140}{5}$ = 28 mi/gal

6. 300° rise in 20 minutes

$\frac{300}{20}$ = 15°/minute

7. 234 points scored in 9 games

$\frac{234}{9}$ = 26 pts/game

8. \$25 earned in 2 hours

$\frac{25}{2}$ = \$12.50/hour

9. 27 feet in 15 seconds

$$\begin{array}{r} 1.8 \\ 15\overline{)27.0} \\ -15 \\ \hline 120 \\ -120 \\ \hline 0 \end{array}$$

1.8 ft/sec

10. 42 minutes for 12 songs

$$\begin{array}{r} 3.5 \\ 12\overline{)42.0} \\ -36 \\ \hline 60 \\ -60 \\ \hline 0 \end{array}$$

3.5 min/song

11. 7 cups of sugar for 4 cakes

$$4\overline{)7.00}\quad -4\ \ 30\ \ -28\ \ 20\ \ -20\ \ 0 \qquad 1.75 \text{ cups/cake}$$

12. 36 minutes to run $4\frac{1}{2}$ miles

$\frac{36}{4.5} \rightarrow \frac{360}{45}$

$$45\overline{)360}\quad -360\ \ 0 \qquad 8 \text{ min/mi}$$

UNIT
Price

Unit prices give the cost per 1 unit. This is especially helpful when comparison shopping to find the best deal. When finding a unit price, always divide the price by the quantity.

Give the unit price of each item.

13. \$36 for 9 books

$\frac{36}{9} = \$4/\text{book}$

14. 5 scarves for \$60

$\frac{60}{5} = \$12/\text{scarf}$

15. 4 bananas for \$2

$\frac{2}{4} = \$0.50/\text{banana}$

16. \$20 to mail an 8-pound package

$$8\overline{)20.0}\quad -16\ \ 40\ \ -40\ \ 0 \qquad \$2.50/\text{lb}$$

17. 30 bottles of water for \$8

$$30\overline{)8.000}\quad -60\ \ 200\ \ -180\ \ 200\ \ -180\ \ 20 \qquad \$0.27/\text{bottle}$$

18. \$3 for 20 ounces of dish soap

$$20\overline{)3.00}\quad -20\ \ 100\ \ -100\ \ 0 \qquad \$0.15/\text{ounce}$$

19. 8 granola bars for \$2.40

$$8\overline{)2.40}\quad -24\ \ 00\ \ -0\ \ 0 \qquad \$0.30/\text{bar}$$

20. 9 gallons of gas for \$25.20

$$9\overline{)25.20}\quad -18\ \ 72\ \ -72\ \ 00\ \ -0\ \ 0 \qquad \$2.80/\text{gal}$$

21. \$0.96 for 3 mini-cupcakes

$$3\overline{)0.96}\quad -9\ \ 06\ \ -6\ \ 0 \qquad \$0.32/\text{cupcake}$$

Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
COMPARING Rates	**1.** Car A traveled 208 miles in 4 hours. Car B traveled 245 miles in 5 hours. Which car traveled at a faster rate? A: $\frac{208}{4} = 52$ mi/hr B: $\frac{245}{5} = 49$ mi/hr Car A
	2. Travion made \$117 working 9 hours at his job. His friend made Lyla made \$87 working 6 hours at her job. Who makes the most per hour? T: $\frac{117}{9} = \$13$/hr L: $\frac{87}{6} = \$14.5$/hr Lyla
	3. Max and JoJo are two Saint Bernard puppies. Max gained 28 pounds in 8 months. JoJo gained 21 pounds in 5 months. Which puppy is gained weight at a faster rate? Max: $\frac{28}{8} = 3.5$ lb/mo JoJo: $\frac{21}{5} = 4.2$ lb/mo JoJo
	4. Beth typed 272 words in 4 minutes. Tori typed 567 words in 9 minutes. Who typed at a faster? B: $\frac{272}{4} = 68$ words/min T: $\frac{567}{9} = 63$ words/min Beth
	5. The calories burned by three friends during their workouts are given below. Who burned the most calories per minute? Malik

Name	Minutes	Calories	
Bryce	25	220	= 8.8 cal/min
Malik	20	184	= 9.2 cal/min
Olivia	30	255	= 8.5 cal/min

	6. Which two juices contain the same amount of sugar per fluid ounce? A and C

Juice	Ounces	Sugar (g)	
A	20	55	= 2.75 g/oz
B	28	70	= 2.5 g/oz
C	12	33	= 2.75 g/oz

What's the

BETTER DEAL?

Use unit prices to determine whether Option A or Option B is the better deal.

	OPTION A	OPTION B
7.	15-oz box of cereal for $5.25 $15\overline{)5.25}$ → .35 -45 75 -75 0 $.35/oz ☐	20-oz box of cereal for $6.40 $20\overline{)6.40}$ → .32 -60 40 -40 0 $.32/oz ☑
8.	5 lbs of ground beef for $19 $5\overline{)19.00}$ → 3.80 -15 40 -40 00 -0 0 $3.80/lb ☐	3 lbs of ground beef for $10.50 $3\overline{)10.50}$ → 3.50 -9 15 -15 00 -0 0 $3.50/lb ☑
9.	12 packs of fruit snacks for $3 $12\overline{)3.00}$ → .25 -24 60 -60 0 $0.25/pack ☑	16 packs of fruit snacks for $4.80 $16\overline{)4.80}$ → .30 -48 00 -0 0 $.30/pack ☐
10.	45 pictures printed for $3.60 $45\overline{)3.60}$ → .08 -360 0 $.08/pic ☐	20 pictures printed for $1.20 $20\overline{)1.20}$ → .06 -120 0 $.06/pic ☑
11.	12 gallons of gas for $33 $12\overline{)33.00}$ → 2.75 -24 90 -84 60 -60 0 $2.75/gal ☑	5 gallons of gas for $14 $5\overline{)14.00}$ → 2.80 -10 40 -40 00 -0 0 $2.80/gal ☐
12.	8 packs of paper for $6.40 $8\overline{)6.40}$ → .80 -64 00 -0 0 $.80/pk ☑	3 packs of paper for $2.55 $3\overline{)2.55}$ → .85 -24 15 -15 0 $.85/pk ☐

WHY DID THE STRAWBERRY cross the road?

Directions: Write each rate as a unit rate. Show all work on a separate sheet of paper. After completing each set, find matching answers. One will have a letter and the other a number. Write the letter in the matching numbered box at the bottom of the page.

SET 1

I	224 points in 7 games	32 pts/gm	8.	76 points in 4 games	19 pts/gm
A.	238 points in 17 games	14 pts/gm	14.	234 points in 9 games	26 pts/gm
O.	276 points in 12 games	23 pts/gm	2.	96 points in 3 games	32 pts/gm
N.	130 points in 5 games	26 pts/gm	16.	204 points in 12 games	17 pts/gm
J.	272 points in 16 games	17 pts/gm	5.	161 points in 7 games	23 pts/gm
E.	152 points in 8 games	19 pts/gm	11.	70 points in 5 games	14 pts/gm

SET 2

S.	56 feet in 14 seconds	4 ft/sec	7.	18 feet in 8 seconds	2.25 ft/sec
W.	46 feet in 8 seconds	5.75 ft/sec	15.	40 feet in 25 seconds	1.6 ft/sec
H.	63 feet in 28 seconds	2.25 ft/sec	3.	108 feet in 27 seconds	4 ft/sec
T.	135 feet in 15 seconds	9 ft/sec	18.	45 feet in 6 seconds	7.5 ft/sec
M.	105 feet in 14 seconds	7.5 ft/sec	10.	23 feet in 4 seconds	5.75 ft/sec
A.	24 feet in 15 seconds	1.6 ft/sec	6.	108 feet in 12 seconds	9 ft/sec

SET 3 (give the **unit price** of each item)

R.	$1.60 for 20 ounces	$0.08 / ounce	4.	$2.40 for 16 ounces	$0.15/ounce
I.	6 ounces for $4.50	$0.75/ ounce	12.	9 ounces for $5.76	$0.64 / ounce
M.	$3.75 for 25 ounces	$0.15/ounce	9.	35 ounces for $2.80	$0.08 /ounce
H.	14 ounces for $5.88	$0.42/ ounce	17.	$3.24 for 12 ounces	$0.27/ounce
S.	$7.68 for 12 ounces	$0.64 / ounce	13.	18 ounces for $13.50	$0.75/ounce
A.	18 ounces for $4.86	$0.27/ounce	1.	$8.40 for 20 ounces	$0.42/ounce

ANSWER:

1.	2.	3.		4.	5.	6.	7.	8.	9.		10.	11.	12.		13.	14.		15.		16.	17.	18.	
H	I	S		M	O	T	H	E	R		W	A	S		I	N		A		J	A	M	!

Name: _____ **Unit 6:** Proportional Relationships

Date: _____ **Per:** _____ **Homework 4:** Rates and Units Rates

**** This is a 2-page document! ****

Directions: Write each rate as a unit rate.

1. 72 minutes to run 9 miles

$\frac{72}{9}$ = 8 min/mile

2. 216 students in 8 classes

$\frac{216}{8}$ = 27 students/class

3. 152 text messages in 4 days

$\frac{152}{4}$ = 38 texts/day

4. 42 gallons in 8 minutes

$8\overline{)42.00}$ = 5.25 gal/min

5. 9 ounces of blueberries in 25 muffins

$25\overline{)9.00}$ = 0.36 oz/muffin

6. 18 acres cleared in 8 days

$8\overline{)18.00}$ = 2.25 acres/day

Directions: Give the unit price of each item.

7. 4 t-shirts for $48

$\frac{48}{4}$ = $12/shirt

8. $21.60 for 9 cans of soup

$\frac{21.60}{9}$ = $2.4/can

9. $144 for 5 gallons of paint

$5\overline{)144.0}$ = $28.80/gal

10. 3 movie tickets for $29.25

$3\overline{)29.25}$ = $9.75/ticket

11. 20 ounces of ketchup for $3.20

$\frac{3.20}{20}$ = $0.16/oz

12. $12 to mail a 1.5-pound package

$15\overline{)120}$ = $8/lb

13. Car A drove 168 miles using 8 gallons of gas. Car B drove 144 using 6 gallons of gas. Which car drives more miles per gallon?

A: $\frac{168}{8}$ = 21 mi/gal

B: $\frac{144}{6}$ = 24 mi/gal

Car B

14. Copy Machine A printed 240 pages in 5 minutes. Copy Machine B printed 378 pages in 9 minutes. Which copy machine prints at a faster rate?

A: $\frac{240}{5}$ = 48 pg/min

B: $\frac{378}{9}$ = 42 pg/min

Copier A

15. Which radio station airs the fewest minutes of commercials per hour?

Station	Heart91.3	Buzz106.5	Fresh98.7
Time (hrs)	3	5	4
Commercials (min)	51	60	56

↳ 17 com/hr ↳ 12 com/hr → 14 com/hr

Buzz 106.5

Directions: Determine whether Option A or Option B is the better deal.

	OPTION A	**OPTION B**
16.	20 batteries for \$16 $20\overline{)16.0}$ → .8, −160, 0 \$.80/batt ☐	8 batteries for \$6 $8\overline{)6.00}$ → .75, −56, 40, −40, 0 \$0.75/batt ☑
17.	5-pound turkey for \$8 $5\overline{)8.0}$ → 1.6, −5, 30, −30, 0 \$1.60/lb ☑	12-pound turkey for \$21 $12\overline{)21.00}$ → 1.75, −12, 90, −84, 60, −60, 0 \$1.75/lb ☐
18.	25 ounces of shampoo for \$9 $25\overline{)9.00}$ → .36, −75, 150, −150, 0 \$.36/ounce ☑	15 ounces of shampoo for \$6 $15\overline{)6.0}$ → .4, −60, 0 \$.40/ounce ☐
19.	4 yards of fabric for \$15.80 $4\overline{)15.80}$ → 3.95, −12, 38, −36, 20, −20, 0 \$3.95/yd ☐	2½ yards of fabric for \$9.50 $25\overline{)950}$ → 3.8, −75, 200, −200, 0 \$3.80/yd ☑
20.	64 ounces of water for \$5.76 $64\overline{)5.76}$ → .09, −576, 0 \$0.09/oz ☑	72 ounces of water for \$8.64 $72\overline{)8.64}$ → .12, −72, 144, −144, 0 \$0.12/oz ☐

Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

PROPORTIONAL

Relationships

- Two quantities have a proportional relationship if there is a constant number (or rate) that when multiplied by the first quantity, gives the second quantity.
- The constant number is called the **constant of proportionality**, known as variable ***k***.
- Two quantities that do not have a constant rate have a non proportional relationship.

Merik and Caroline are playing a video game. The tables below give the number of points they have scored each minute for the first four minutes. Complete each table and determine the type of relationship.

Merik		
Minutes	**Points**	**Rate**
1	8	8
2	16	8
3	24	8
4	32	8

Type of Relationship: proportional

Caroline		
Minutes	**Points**	**Rate**
1	8	8
2	14	7
3	24	8
4	36	9

Type of Relationship: nonproportional

EXAMPLES

HELPFUL HINT:
To test for a constant rate, divide the second quantity by the first quantity. If it's consistent, then this is the constant of proportionality!

Determine whether the quantities in each table or graph represent a proportional relationship. If yes, give the constant of proportionality, *k*.

1.

Minutes	1	2	3	4
Laps	3	6	9	12
	3	3	3	3

yes; $k = 3$

2.

Gas (gal)	2	5	9	16
Miles	52	130	234	416
	26	26	26	26

yes; $k = 26$

3.

Buses	1	3	6	8
Students	58	156	336	472
	58	52	56	59

No

4.

Ounces	4	12	20	36
Cost	$3	$9	$15	$27
	3/4	3/4	3/4	3/4

yes;
$k = \frac{3}{4}$

5.

Tickets	2	5	8	10
Cost	$13	32.50	$52	$65
	6.5	6.5	6.5	6.5

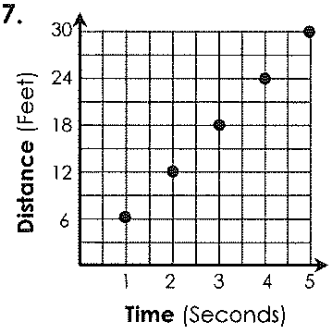
yes;
$k = 6.5$

6.

T-Shirts	1	3	7	16
Cost	$15	$45	$84	$144
	15	15	12	9

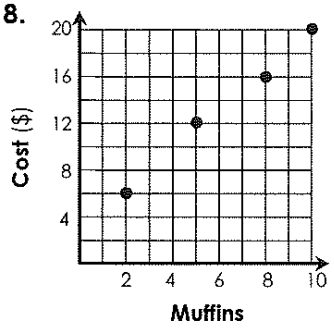
no

7.



yes;
$k = 6$

8.



No

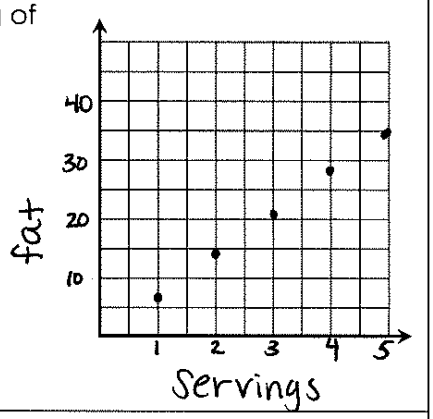
GRAPHING

Proportional Relationships

Complete each table, then graph the relationship.

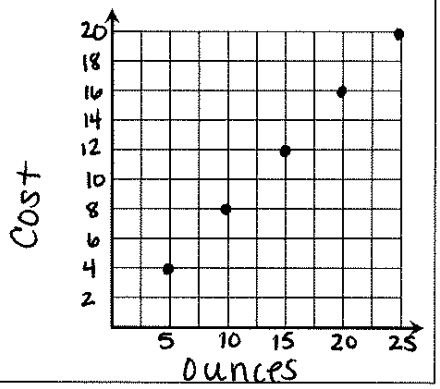
9. There are 7 grams of fat in each serving of potato chips.

Servings	Fat (gm)
1	7
2	14
3	21
4	28
5	35



10. A sports drink costs $0.80 per ounce.

Ounces	Cost ($)
5	$4
10	$8
15	$12
20	$16
25	$20



Name: _____ **Unit 6:** Proportional Relationships

Date: _____ Per: _____ **Homework 5:** Proportional Relationships

Directions: Determine whether the quantities in each table or graph represents a proportional relationship. If yes, give the constant of proportionality, k.

1.

Bags of Skittles	1	2	3	4
Red Skittles	9	18	28	32

No

2.

Years	3	5	9	12
Tree Growth (in)	39	65	117	156

Yes; $k = 13$

3.

Flour (cups)	2	4	6	8
Butter (tbsp)	5	10	15	20

Yes; $k = \frac{5}{2}$

4.

Fish	8	10	15	24
Water (gal)	10	15	24	30

No

5.

Printed Pictures	15	20	35	50
Cost ($)	3	4	7	10

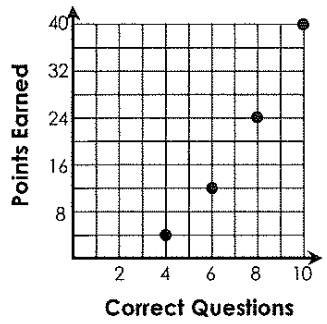
Yes; $k = \frac{1}{5}$

6.

Hours	2	3	8	12
Earnings ($)	24	36	96	120

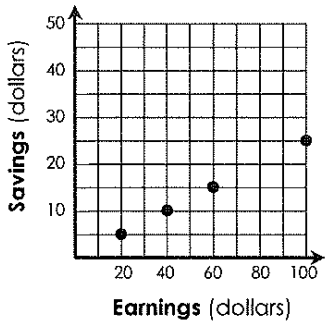
No

7.



No

8.

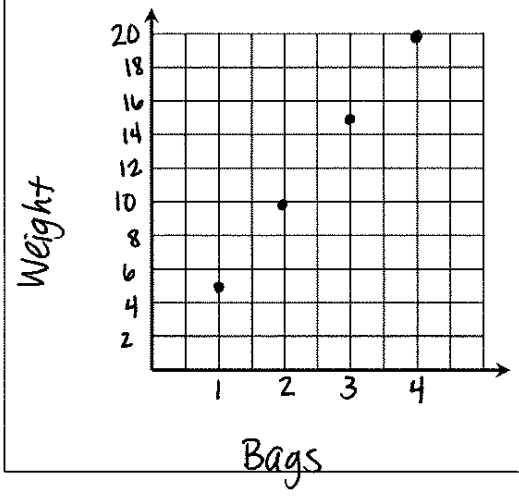


Yes; $k = \frac{1}{4}$

Directions: Complete each table, then graph the relationship.

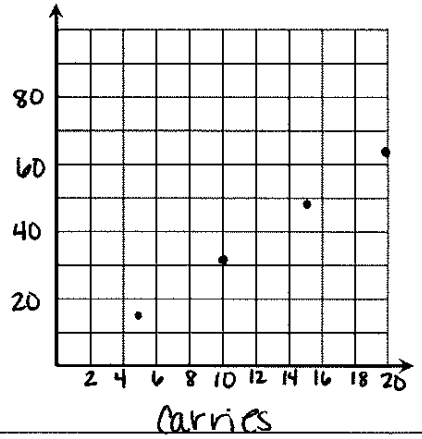
9. Each bag of sand weighs 5 pounds

Bags of Sand	1	2	3	4
Weight (lbs)	5	10	15	20



10. A running back averages 3.2 yards per carry.

Carries	5	10	15	20
Yards	16	32	48	64



Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

Missing Values in

PROPORTIONAL RELATIONSHIPS

We can use our understanding of proportional relationships and the constant of proportionality to find missing values in a proportional relationship.

Example: The amount of money that Ben spends on books is proportional to the number of books he purchases. Answer the questions below to find the missing values in the table.

→ ×9

Books	Cost ($)
2	18
5	45
8	72

← ÷9

a) What is the constant of proportionality?

$k=9$

b) How much do 2 books cost?

$18

c) If Ben spent $72, how many books did he purchase?

8 books

Once you find the constant of proportionality:

- Multiply to go from the first quantity to the second quantity
- Divide to go from the second quantity to the first quantity

EXAMPLES

Assume each table represents a proportional relationship. Identify the constant of proportionality, then find the missing values.

1.

Weeks	Savings ($)
3	$45
10	$150
17	$255

$k=15$

2.

Years	Height (in)
5	35
9	63
12	84

$k=7$

3.

Boys	Girls
5	15
12	36
35	105

$k=3$

4.

Days	Miles Ran
4	24
13	78
18	108

$k=6$

5.

Gallons	3	8	14
Miles	54	144	252

$k=18$

6.

Minutes	3	5	12
Heartbeats	186	310	744

$k = 62$

7.

Fabric (yds)	2	5	12.5
Cost ($)	3.2	8	20

$k = 1.6$

8.

Cans of Soup	2	9	16
Cost ($)	5	22.5	40

$k = 2.5$

SOLVING PROBLEMS

Find each missing value.

9. A cyclist is riding his bike at 22 feet per second. How far will the cyclist travel in 15 seconds?

sec	1	15
feet	22	?

; $k = 22$

330 feet

10. Dale earned $60 for washing 8 cars. At this rate, how much will he earn for washing 14 cars?

Cars	8	14
$	60	?

; $k = 7.5$

$105

11. Elyse ran 4 miles in 32 minutes. At this rate, how many miles can she run in 50 minutes?

min	32	50
miles	4	?

; $k = \frac{1}{8}$

6.25 miles

12. There are 15 grams of fat in 4 ounces of ice cream. How many grams of fat are in 30 ounces of ice cream?

ounces	4	30
fat (gr)	15	?

; $k = 3.75$

112.5 grams

13. If 5 bottles of water cost $4, how much will 16 bottles cost?

bottles	5	16
cost($)	4	?

; $k = .8$

$12.80

14. A jar of peanut butter costs $0.24 per ounce. How many ounces are in a jar that costs $3.84?

ounces	1	?
cost($)	0.24	3.84

; $k = .24$

16 ounces

Name: _____ **Unit 6:** Proportional Relationships

Date: _____ **Per:** _____ **Homework 6:** Finding Missing Values with Unit Rates

Directions: Assume each table represents a proportional relationship. Identify the constant of proportionality and complete the table with the missing values.

1.

Bats	Baseballs
2	12
7	42
13	78

$k = 6$

2.

Strawberries	Blueberries
2	16
5	40
18	144

$k = 8$

3.

Quarters	Pennies
5	15
19	57
28	84

$k = 3$

4.

Water (cups)	2	5
Cherry Flavor (drops)	7	17.5

$k = 3.5$

5.

Items Sold	8	24
Profit ($)	12	36

$k = 1.5$

6.

Ground Beef (lbs)	2	5
Cost ($)	7.6	19

$k = 3.8$

7.

Pencils	15	25	40
Cost ($)	3	5	8

$k = 1/5$

8. A company tested 90 products and found 6 were defective. If the number of products tested is proportional to the number of defective products, how many defective products can they expect out of 300 products?

Defective	6	?
Products	90	300

; $k = 15$

20 defective

9. Vanessa paid $160 for 5 shares of stock. At this rate, how much will she pay for 13 shares?

Shares	5	13
Cost ($)	160	?

; $k = 32$

$416

10. Alex combined 5 ounces of chocolate syrup with 2 cups of milk to make chocolate milk. Using the same recipe, how many ounces of chocolate syrup would be need for 7 cups of milk?

Milk	2	7
Chocolate	5	?

; $k = 2.5$

17.5 ounces

11. Talia hit some traffic on the highway. In the past 15 minutes, she traveled 6 miles. How many minutes will it take her to travel 20 miles at the same rate?

min	15	?
miles	6	20

; $k = 0.4$

50 min

Name: _____ **Math 6**

Date: _____ **Per:** _____ **Unit 6:** Proportional Relationships

Quiz 6-2: Unit Rates & Proportional Relationships

Write each rate as a unit rate.

1. 252 calories in 3 chocolates

$\frac{252}{3} = 84$

2. 180 gallons in 24 minutes

$\frac{180}{24} = 7.5$

1. 84 Cal / cookies
2. 7.5 gal / min
3. 0.45 lb / mo
4. 1.4 in / hr

3. 9 pounds in 20 months

$\frac{9}{20} \rightarrow 20\overline{)9.00}$

-80

100

-100

0

$.45$

4. 11.2 inches of snow in 8 hours

$\frac{11.2}{8} \rightarrow 8\overline{)11.2}$

-8

32

-32

0

1.4

5. Students who type at least 38 words per minute will move on to the next level of keyboarding class. Check the students that will move on.

Student	Minutes	Words	
☐ Jensen	8	296	→ 37
☑ Devin	4	164	→ 41
☐ Marcus	9	315	→ 35
☑ Sydney	7	266	→ 38

Determine whether Option A or Option B is the better deal. Justify your answer by giving the unit price for each item.

6. ☑ **Option A:** \$7.20 for 3 boxes of tissues

☐ **Option B:** \$20 for 8 boxes of tissues

Unit Price: \$2.40 / box

Unit Price: \$2.50 / box

7. ☐ **Option A:** 12 bagels for \$8.40

☑ **Option B:** 5 bagels for \$3.40

Unit Price: \$0.70 / bagel

Unit Price: \$0.68 / bagel

Determine whether the quantities in each table or graph represent a proportional relationship. If yes, give the constant of proportionality.

8.

Chaperones	Students
5	80
8	128
12	192
20	320

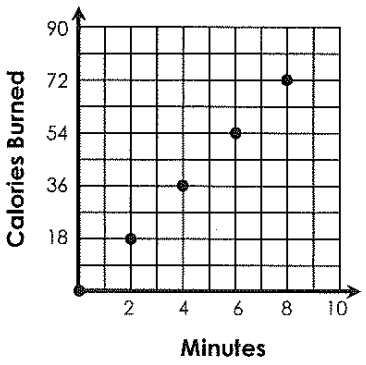
Proportional? Yes
Constant: $k=16$

9.

Hours	Miles
1	18
2	36
3	60
4	84

Proportional? NO
Constant: —

10.



Proportional? Yes
Constant: $k=9$

The quantities in each table represent a proportional relationship. Use the constant of proportionality to find the missing values.

11.

Tickets	Cost ($)
6	48
14	112
25	200

$k=8$

12.

Blue Paint (oz)	Yellow Paint (oz)
4	14
18	63
26	91

$k=3.5$

13. Vienna bought 8 yards of fabric and paid $38.40. How many more yards can she purchase with $30?

yds	8	?
cost	38.40	30

$k=4.8$

14. If 12 blueberries weigh 7.2 grams, find the weight of 32 blueberries.

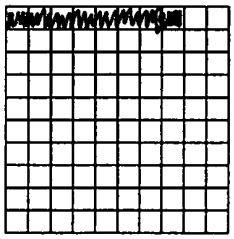
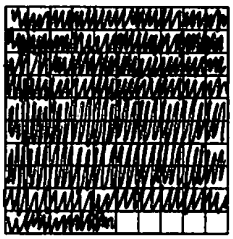
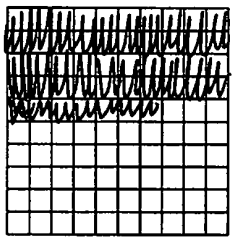
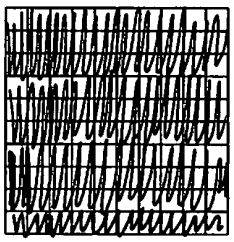
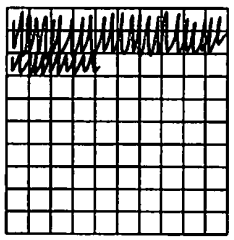
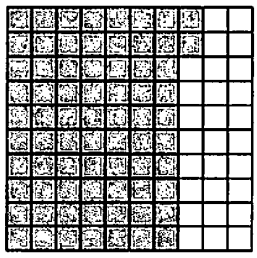
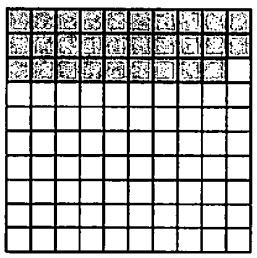
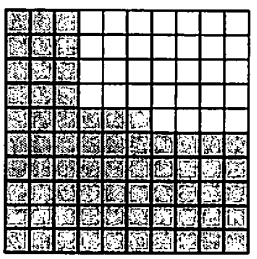
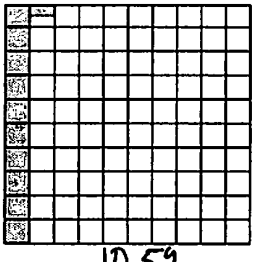
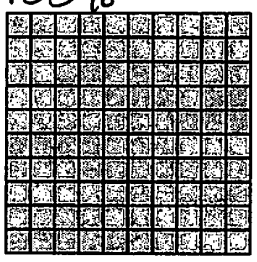
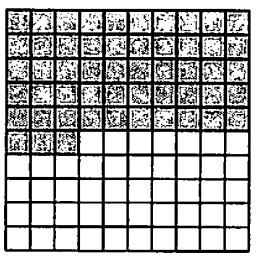
blueberries	12	32
weight	7.2	?

$k=0.6$

13. 6.25 yards

14. 19.2 grams

Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
PERCENT	• A percent is a ratio of a number to 100. (The word "*percent*" means "*per hundred*"!) • For example, if a state charges 6% sales tax, then you will pay $6 for every $100 you spend in sales tax.
MODELING *Percents*	**Model each percent on a 10x10 square grid.** **1.** 8%  **2.** 95%  **3.** 47%  **4.** 62.5%  **5.** 124%   **Write the percent represented by each model** **6.**  72% **7.**  29% **8.**  68% **9.**  10.5% **10.** 153%  

Writing PERCENTS AS FRACTIONS

TO WRITE A PERCENT AS A FRACTION:
Write the percent as a fraction with a denominator of 100, then simplify.

75% $= \frac{75}{100} = \boxed{\frac{3}{4}}$

11. 28%

$\frac{28}{100} = \boxed{\frac{7}{25}}$

12. 65%

$\frac{65}{100} = \boxed{\frac{13}{20}}$

13. 54%

$\frac{54}{100} = \boxed{\frac{27}{50}}$

14. 140%

$\frac{140}{100} = \boxed{\frac{7}{5}}$

15. 225%

$\frac{225}{100} = 2\frac{25}{100} = \boxed{2\frac{1}{4}}$

16. 37.5%

$\frac{37.5}{100} \rightarrow \frac{75}{200} = \boxed{\frac{3}{8}}$

Writing FRACTIONS AS PERCENTS

TO WRITE A FRACTION AS A PERCENT:
Write an equivalent fraction with a denominator of 100.

$\frac{3}{20} = \frac{15}{100} = \boxed{15\%}$

17. $\frac{4}{5} = \frac{80}{100}$

$\boxed{80\%}$

18. $\frac{23}{25} = \frac{92}{100}$

$\boxed{92\%}$

19. $\frac{7}{20} = \frac{35}{100}$

$\boxed{35\%}$

20. $1\frac{9}{10} \rightarrow \frac{19}{10} = \frac{190}{100}$

$\boxed{190\%}$

21. $\frac{5}{2} = \frac{250}{100}$

$\boxed{250\%}$

22. $\frac{87}{200} = \frac{43.5}{100}$

$\boxed{43.5\%}$

23. $\frac{34}{40} \rightarrow \frac{17}{20} = \frac{85}{100}$

$\boxed{85\%}$

24. $\frac{48}{75} \rightarrow \frac{16}{25} = \frac{64}{100}$

$\boxed{64\%}$

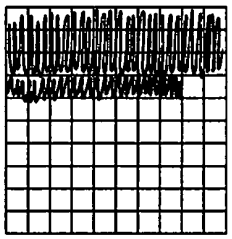
WATCH OUT!
Some fractions can be simplified first!

Name: _____ **Unit 6:** Proportional Relationships

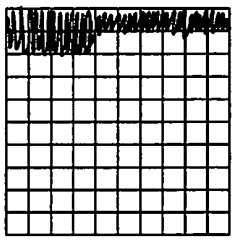
Date: _____ **Per:** _____ **Homework 7:** Introduction to Percents

Directions: Model each percent on a 10x10 grid.

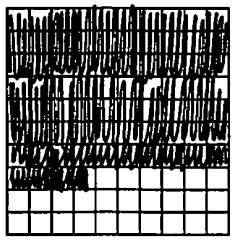
1. 38%



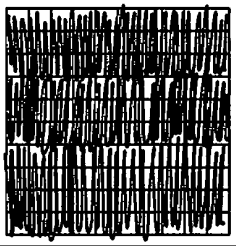
2. 14%



3. 73.5%



4. 162%



Directions: Write each percent as a fraction in simplest form.

5. 17%

$\frac{17}{100}$

6. 60%

$\frac{60}{100} = \frac{3}{5}$

7. 55%

$\frac{55}{100} = \frac{11}{20}$

8. 4%

$\frac{4}{100} = \frac{1}{25}$

9. 178%

$\frac{178}{100} = 1\frac{78}{100} = 1\frac{39}{50}$

10. 32.5%

$\frac{32.5}{100} \rightarrow \frac{65}{200} = \frac{13}{40}$

11. If 48% of the students at Oak Grove Middle School ride the bus, write this percent as a fraction.

$\frac{48}{100} = \frac{12}{25}$

12. Rylan ran for class president and got 62.5% of the votes. Write this percent as a fraction.

$\frac{62.5}{100} \rightarrow \frac{125}{200} = \frac{5}{8}$

Directions: Write each fraction as a percent in simplest form.

13. $\frac{21}{50} = \frac{42}{100}$

42%

14. $\frac{9}{25} = \frac{36}{100}$

36%

15. $\frac{7}{4} = \frac{175}{100}$

175%

16. $\frac{6}{30} \rightarrow \frac{1}{5} = \frac{20}{100}$

20%

17. $\frac{12}{40} \rightarrow \frac{3}{10} = \frac{30}{100}$

30%

18. $2\frac{17}{20} = 2\frac{85}{100} = \frac{285}{100}$

285%

19. Felix got 51 out of 60 questions correct on his math test. Give his score as a percent.

$\frac{51}{60} \rightarrow \frac{17}{20} = \frac{85}{100}$ 85%

20. Alaina sold 63 raffle tickets out of the 200 she was given at a basketball game. What percent of the tickets did she sell?

$\frac{63}{200} = \frac{31.5}{100}$ 31.5%

Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

Writing PERCENTS AS DECIMALS

TO WRITE A PERCENT AS A DECIMAL:
Move the decimal two places to the left.
(This divides the percent by 100).
Add zeros when necessary.

63% = .63

Write each percent as a decimal.

1. 42% 0.42	**2.** 75% 0.75	**3.** 3% 0.03
4. 118% 1.18	**5.** 270% 2.70	**6.** 27.6% 0.276
7. 1.875% 0.01875	**8.** 0.25% 0.0025	**9.** 13.25% 0.1325
10. $66.\overline{6}\%$ $0.\overline{6}$	**11.** $123.\overline{3}\%$ $1.2\overline{3}$	**12.** $0.\overline{5}\%$ $0.00\overline{5}$

Writing DECIMALS AS PERCENTS

TO WRITE A DECIMAL AS A PERCENT:
Move the decimal two places to the right.
(This multiplies the percent by 100).
Add zeros when necessary.

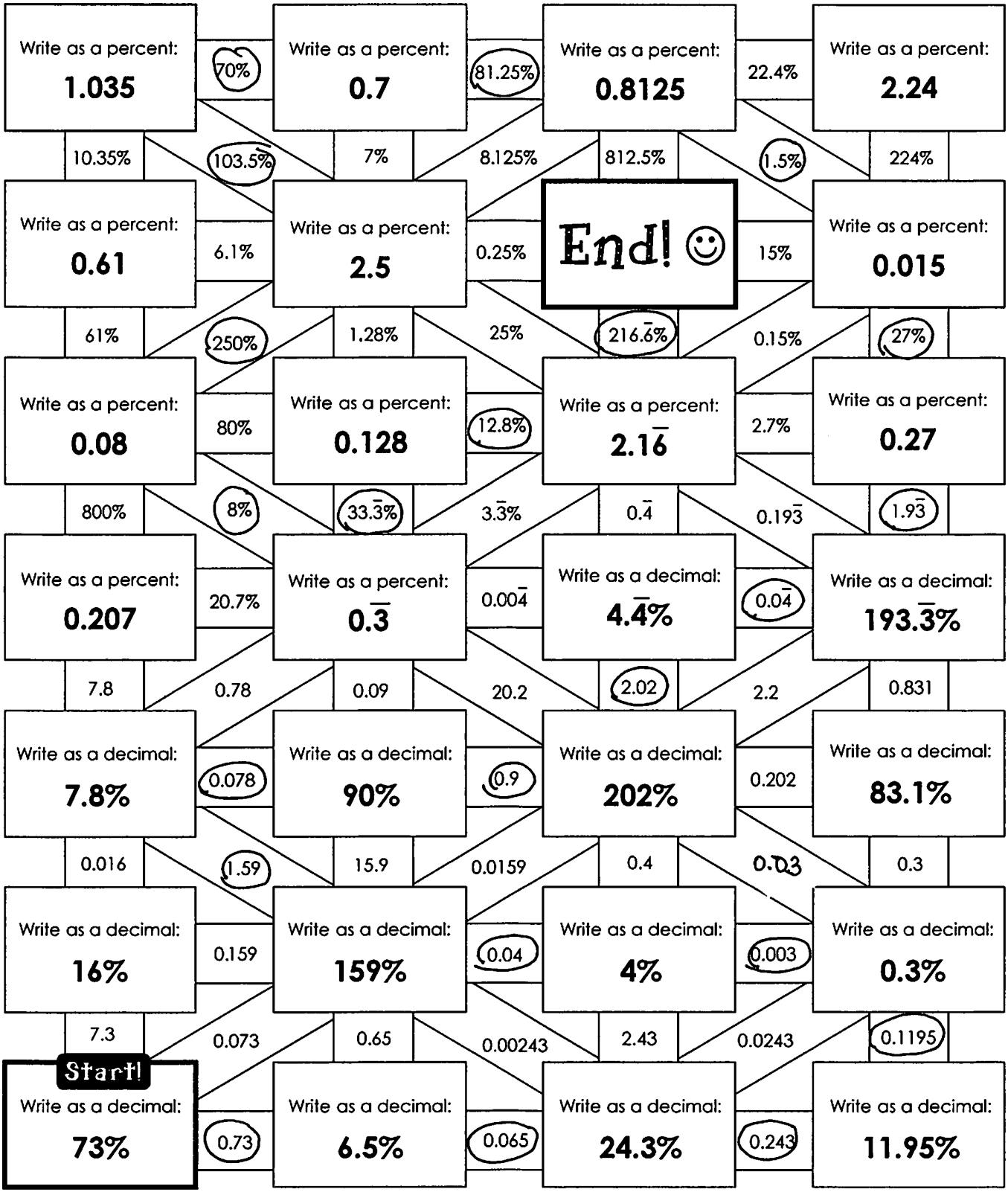
0.28 = 28%

Write each decmal as a percent.

13. 0.12 12%	**14.** 0.68 68%	**15.** 0.875 87.5%
16. 0.08 8%	**17.** 2.5 250%	**18.** 0.049 4.9%
19. 1.3 130%	**20.** 0.1825 18.25%	**21.** 0.0036 0.36%
22. $0.\overline{7}$ $77.\overline{7}\%$	**23.** $0.1\overline{6}$ $16.\overline{6}\%$	**24.** $2.8\overline{3}$ $283.\overline{3}\%$

Percents and Decimals Maze!

Directions: Write the percents as decimals and the decimals as percents. Use your solutions to navigate through the maze. **Mark your pathway as you move through the maze.**



Name: _____ **Unit 6:** Proportional Relationships

Date: _____ Per: _____ **Homework 8:** Percents and Decimals

Directions: Write each percent as a decimal.

1. 74% 0.74	**2.** 9% 0.09	**3.** 25.2% 0.252
4. 132% 1.32	**5.** 6.7% 0.067	**6.** 0.16% 0.0016
7. 40% 0.4	**8.** 106% 1.06	**9.** 115.9% 1.159
10. $88.\overline{8}\%$ $0.\overline{8}$	**11.** $233.\overline{3}\%$ $2.\overline{3}$	**12.** $194.\overline{4}\%$ $1.9\overline{4}$

13. A bank account earns 5.25% interest. Write this percent as a decimal.

0.0525

14. Kara rented a new movie and watched 38% of it. Write the percent she has left to watch as a decimal.

$\begin{array}{r} {}^{9}\cancel{10}\,{}^{10}\cancel{0} \\ -\ 38 \\ \hline 62 \end{array}$ 62% → 0.62

Directions: Write each decimal as a percent.

15. 0.53 53%	**16.** 0.27 27%	**17.** 0.419 41.9%
18. 0.05 5%	**19.** 1.74 174%	**20.** 0.008 0.8%
21. 2.125 212.5%	**22.** 0.3 30%	**23.** 0.3125 31.25%
24. $0.8\overline{1}$ $81.\overline{1}\%$	**25.** $1.\overline{6}$ $166.\overline{6}\%$	**26.** $1.\overline{27}$ $127.\overline{27}\%$

27. Which values are less than 3%? Check all that apply.

☐ **1.09**	☐ **0.2**	☑ **0.015**	☐ **0.04**	☑ **0.0075**
109%	20%	1.5%	4%	0.75%

Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

PERCENTS AS FRACTIONS
(Using Decimals)

To write a percent as a fraction, we can use the decimal form of the percent and place value to write the fraction.

Step 1: Write the percent as a decimal.

Step 2: Write the fraction using place value.

Step 3: Simplify, if needed.

Example: Write **40%** as a fraction.

$0.4 = \frac{4}{10} = \boxed{\frac{2}{5}}$

Write each percent as a fraction.

1. 54%

$.54 = \frac{54}{100} = \boxed{\frac{27}{50}}$

2. 8%

$0.08 = \frac{8}{100} = \boxed{\frac{2}{25}}$

3. 160%

$1.6 = 1\frac{6}{10} = \boxed{1\frac{3}{5}}$

4. 62.5%

$0.625 = \frac{625}{1000} = \boxed{\frac{5}{8}}$

5. 42.5%

$0.425 = \frac{425}{1000} = \boxed{\frac{17}{40}}$

6. 245%

$2.45 = 2\frac{45}{100} = \boxed{2\frac{9}{20}}$

7. 32.8%

$0.328 = \frac{328}{1000} = \boxed{\frac{41}{125}}$

8. 76.5%

$0.765 = \frac{765}{1000} = \boxed{\frac{153}{200}}$

FRACTIONS AS PERCENTS
(Using Decimals)

To write a fraction as a percent, we can write the fraction in decimal form, then move the decimal twice to the right.

Step 1: Simplify the fraction, if possible

Step 2: Divide the numerator by the denominator.

Step 3: Move the decimal two places to the right.

Example: Write $\frac{3}{8}$ as a fraction.

$$\begin{array}{r} 0.375 \\ 8\overline{)3.000} \\ -24 \\ \hline 60 \\ -56 \\ \hline 40 \\ -40 \\ \hline 0 \end{array}$$

$\boxed{37.5\%}$

Write each fraction as a percent.

9. $\frac{3}{25}$

$$25\overline{)3.00}\quad 0.12$$
$$-25$$
$$50$$
$$-50$$
$$0$$

12%

10. $\frac{14}{16} = \frac{7}{8}$

$$8\overline{)7.000}\quad 0.875$$
$$-64$$
$$60$$
$$-56$$
$$40$$
$$-40$$
$$0$$

87.5%

11. $\frac{29}{40}$

$$40\overline{)29.000}\quad 0.725$$
$$-280$$
$$100$$
$$-80$$
$$200$$
$$-200$$
$$0$$

72.5%

12. $\frac{8}{125}$

$$125\overline{)8.000}\quad 0.064$$
$$-750$$
$$500$$
$$-500$$
$$0$$

6.4%

13. $\frac{2}{3}$

$$3\overline{)2.000}\quad 0.6\overline{6}$$
$$-18$$
$$20$$
$$-18$$
$$20$$
$$-18$$
$$2$$

66.6%

14. $1\frac{7}{12}$

$$12\overline{)7.0000}\quad 0.58\overline{3}$$
$$-60$$
$$100$$
$$-96$$
$$40$$
$$-36$$
$$40$$
$$-36$$
$$4$$

$158.\overline{3}\%$

15. $\frac{12}{45} = \frac{4}{15}$

$$15\overline{)4.000}\quad .2\overline{6}$$
$$-30$$
$$100$$
$$-90$$
$$100$$
$$-90$$
$$10$$

26.6%

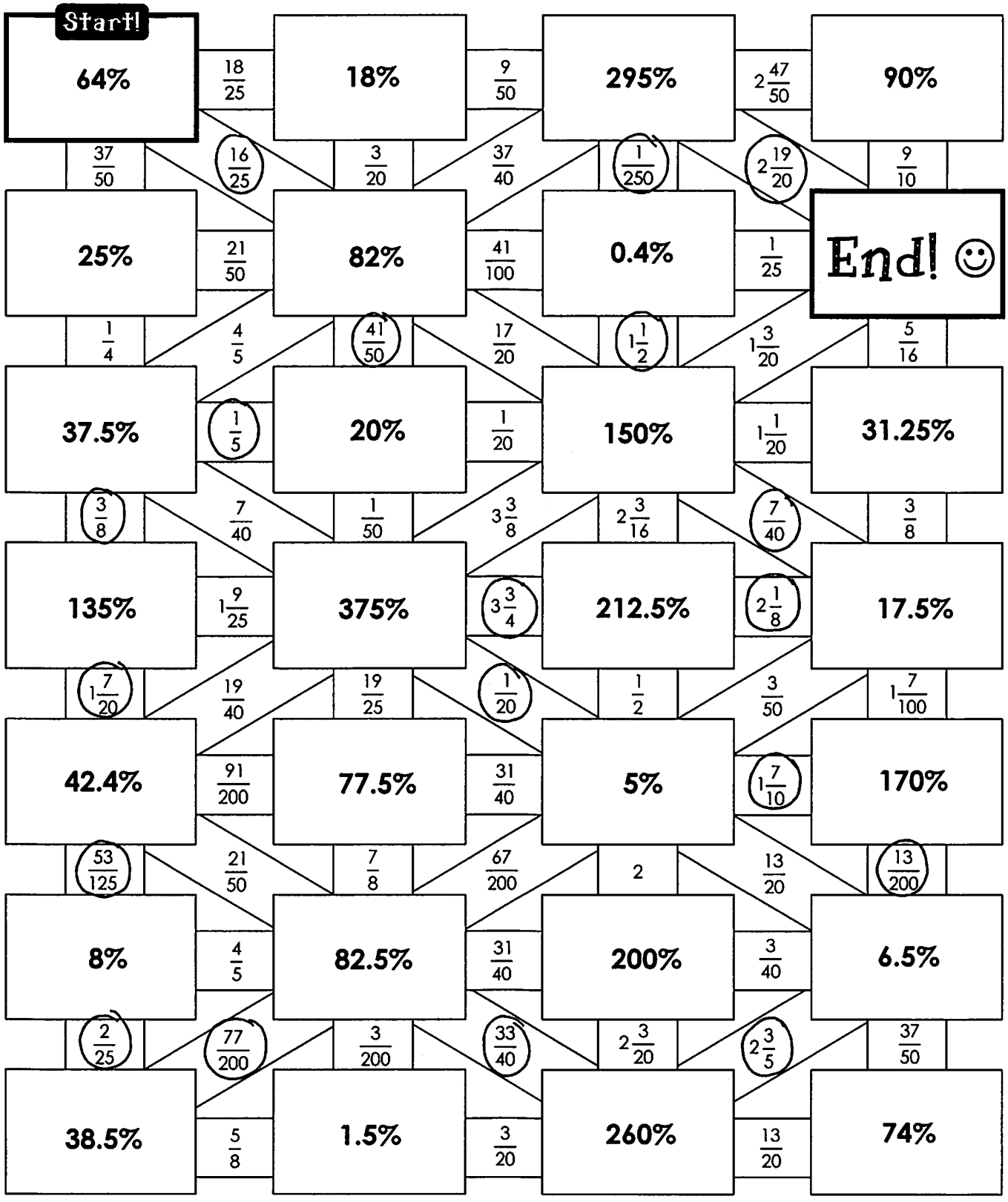
16. $2\frac{5}{6}$

$$6\overline{)5.000}\quad .8\overline{3}$$
$$-48$$
$$20$$
$$-18$$
$$20$$
$$-18$$
$$2$$

$283.\overline{3}\%$

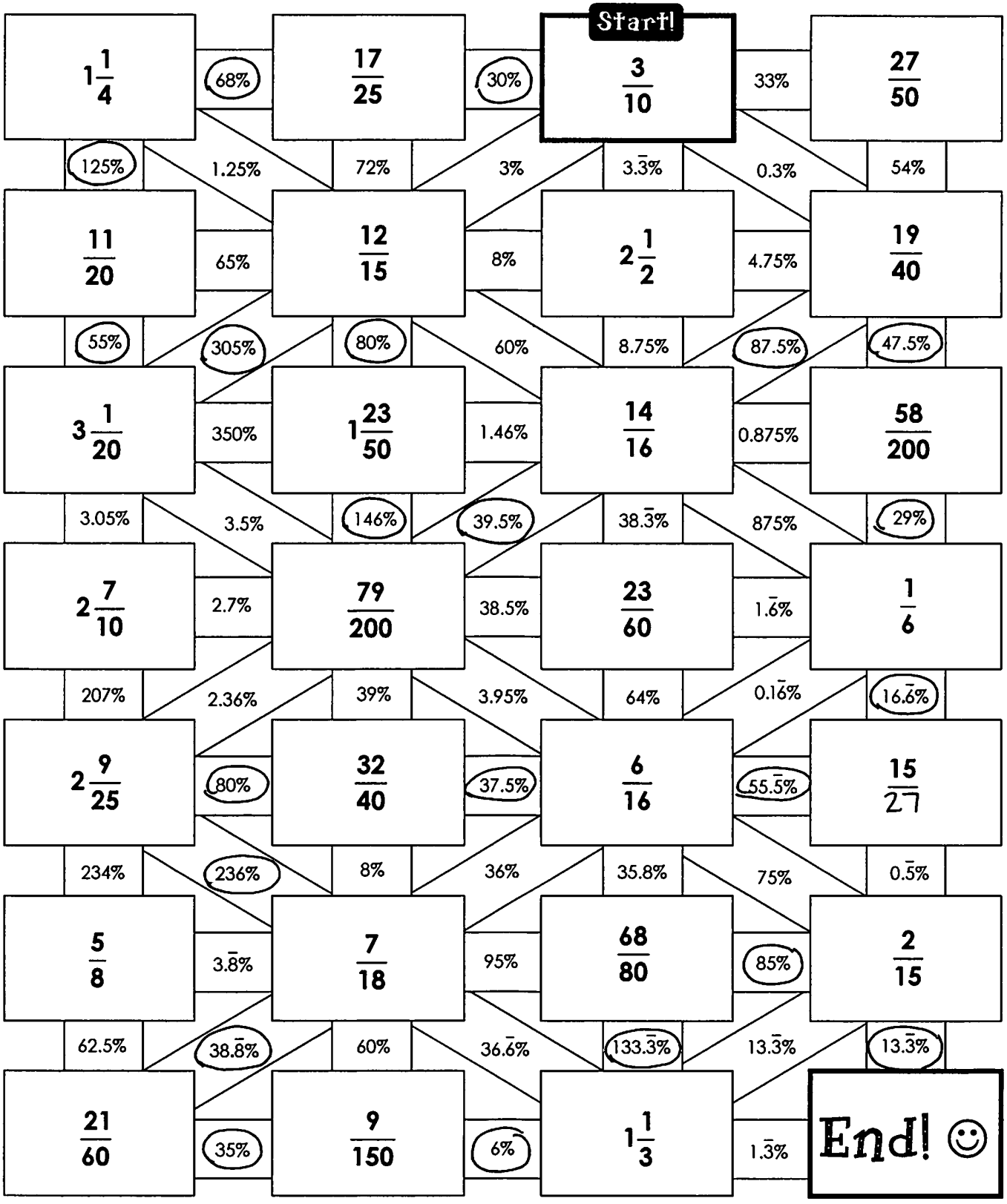
Percents to Fractions Maze!

Directions: Write the percents as fractions or mixed numbers in simplest form. Use your solutions to navigate through the maze. **Mark your pathway as you move through the maze.**



Fractions to Percents Maze!

Directions: Write the fractions or mixed numbers as percents. Use your solutions to navigate through the maze. **Mark your pathway as you move through the maze.**



Name: _____ **Unit 6:** Proportional Relationships

Date: _____ **Per:** _____ **Homework 9:** Fractions and Percents

**** This is a 2-page document! ****

Directions: Write each percent as a fraction in simplest form.

1. 27% → 0.27

$\frac{27}{100}$

2. 80% → 0.8

$\frac{8}{10} = \frac{4}{5}$

3. 152% → 1.52

$1\frac{52}{100} = 1\frac{13}{25}$

4. 2% → .02

$\frac{2}{100} = \frac{1}{50}$

5. 355% → 3.55

$3\frac{55}{100} = 3\frac{11}{20}$

6. 87.5% → 0.875

$\frac{875}{1000} = \frac{7}{8}$

7. 32.8% → 0.328

$\frac{328}{1000} = \frac{41}{125}$

8. 17.5% → 0.175

$\frac{175}{1000} = \frac{7}{40}$

9. 56.5% → 0.565

$\frac{565}{1000} = \frac{113}{200}$

10. Sienna's bank account earns 4.5% interest. Write this percent as a fraction in simplest form.

$.045 = \frac{45}{1000} = \frac{9}{200}$

11. The sixth grade class raised 116% of their goal in a school fundraiser. Write this percent as a fraction in simplest form.

$1.16 = 1\frac{16}{100} = 1\frac{4}{25}$

12. A theater sold 92.5% of the tickets for the opening night of a production. Write this percent as a fraction in simplest form.

$.925 = \frac{925}{1000} = \frac{37}{40}$

13. If 27.2% of the pitchers in a baseball league are left-handed, write this percent as a fraction in simplest form.

$.272 = \frac{272}{1000} = \frac{34}{125}$

Directions: Write each fraction as a percent.

14. $\frac{11}{25}$

$25\overline{)11.00}$ → 0.44

-100

100

-100

0

44%

15. $1\frac{2}{5}$

$5\overline{)2.0}$ → 0.4

-20

0

1.4 → 140%

16. $\frac{13}{50}$

$50\overline{)13.00}$ → 0.26

-100

300

-300

0

26%

17. $\frac{7}{40}$

$40\overline{)7.000}$ → 0.175

-40 → 300

-280 → 200

-200 → 0

17.5%

18. $\frac{10}{16} = \frac{5}{8}$

$8\overline{)5.000}$ → 0.625

-48 → 20

-16 → 40

-40 → 0

62.5%

19. $\frac{93}{200}$

$200\overline{)93.000}$ → 0.465

-800 → 1300

-1200 → 1000

-1000 → 0

46.5%

20. $\frac{5}{6}$

$6\overline{)5.000}$ → $0.8\overline{33}$

-48 → 20

-18 → 20

-18 → 2

$83.\overline{3}\%$

21. $\frac{8}{12} = \frac{2}{3}$

$3\overline{)2.000}$ → $0.\overline{66}$

-18 → 20

-18 → 20

-18 → 2

$66.\overline{6}\%$

22. $2\frac{1}{3}$

$3\overline{)1.000}$ → $0.\overline{33}$

-9 → 10

-9 → 10

-9 → 1

$233.\overline{3}\%$

23. $\frac{10}{24} = \frac{5}{12}$

$12\overline{)5.0000}$ → $0.41\overline{66}$

-48 → 20

-12 → 80

-72 → 80

-72 → 8

$41.\overline{6}\%$

24. $\frac{4}{15}$

$15\overline{)4.000}$ → $0.2\overline{6}$

-30 → 100

-90 → 100

-90 → 10

$26.\overline{6}\%$

25. $1\frac{8}{9}$

$9\overline{)8.000}$ → $0.\overline{88}$

-72 → 80

-72 → 80

-72 → 8

$188.\overline{8}\%$

26. A hockey team has won 28 out of the 32 games they have played so far this season. What percent of the games have they won?

$\frac{28}{32} = \frac{7}{8}$

$8\overline{)7.000}$ → 0.875

-64 → 60

-56 → 40

-40 → 0

87.5%

27. Of the 150 students in marching band, 18 play the clarinet. What percent of the students in the band play clarinet?

$\frac{18}{150} = \frac{3}{25}$

$25\overline{)3.00}$ → 0.12

-25 → 50

-50 → 0

12%

converting

FRACTIONS, DECIMALS, & PERCENTS

GIVEN FRACTIONS

Write each fraction as a decimal and as a percent.

1. $\frac{19}{25}$

$$25\overline{)19.00}\quad 0.76$$
$$-175$$
$$150$$
$$-150$$
$$0$$

DECIMAL:	PERCENT:
0.76	76%

2. $\frac{6}{16} = \frac{3}{8}$

$$8\overline{)3.000}\quad 0.375$$
$$-24$$
$$60$$
$$-56$$
$$40$$
$$-40$$
$$0$$

DECIMAL:	PERCENT:
0.375	37.5%

3. $1\frac{3}{5}$

$$5\overline{)3.0}\quad 0.6$$
$$-30$$
$$0$$

DECIMAL:	PERCENT:
1.6	160%

4. $\frac{38}{40} = \frac{19}{20}$

$$20\overline{)19.00}\quad 0.95$$
$$-180$$
$$100$$
$$-100$$
$$0$$

DECIMAL:	PERCENT:
0.95	95%

5. $\frac{7}{9}$

$$9\overline{)7.000}\quad 0.777\ldots$$
$$-63$$
$$70$$
$$-63$$
$$70$$
$$-63$$
$$7$$

DECIMAL:	PERCENT:
$0.\overline{7}$	$77.\overline{7}\%$

6. $2\frac{1}{3}$

$$3\overline{)1.000}\quad 0.333\ldots$$
$$-9$$
$$10$$
$$-9$$
$$10$$
$$-9$$
$$1$$

DECIMAL:	PERCENT:
$2.\overline{3}$	$233.\overline{3}\%$

GIVEN DECIMALS

Write each decimal as a fraction and as a percent.

7. 0.46

$$\frac{46}{100} = \frac{23}{50}$$

FRACTION:	PERCENT:
23/50	46%

8. 1.3

$$1\frac{3}{10}$$

FRACTION:	PERCENT:
$1\ 3/10$	130%

9. 0.275

$$\frac{275}{1000} = \frac{11}{40}$$

FRACTION:	PERCENT:
11/40	27.5%

10. 1.625

$$1\frac{625}{1000} = 1\frac{5}{8}$$

FRACTION:	PERCENT:
$1\ 5/8$	162.5%

11. 2.05

$$2\frac{05}{100} = 2\frac{1}{20}$$

FRACTION:	PERCENT:
$2\ 1/20$	205%

12. 0.72

$$\frac{72}{100} = \frac{18}{25}$$

FRACTION:	PERCENT:
18/25	72%

GIVEN PERCENTS

Write each percent as a fraction and as a decimal.

13. 96% → 0.96

$\frac{96}{100} = \frac{24}{25}$

FRACTION:	DECIMAL:
24/25	0.96

14. 210% → 2.10

$2\frac{1}{10}$

FRACTION:	DECIMAL:
2 1/10	2.1

15. 6% → 0.06

$\frac{6}{100} = \frac{3}{50}$

FRACTION:	DECIMAL:
3/50	0.06

16. 34.4% → 0.344

$\frac{344}{1000} = \frac{43}{125}$

FRACTION:	DECIMAL:
43/125	0.344

17. 187.5% → 1.875

$1\frac{875}{1000} = 1\frac{7}{8}$

FRACTION:	DECIMAL:
1 7/8	1.875

18. 67.5% → 0.675

$\frac{675}{1000} = \frac{27}{40}$

FRACTION:	DECIMAL:
27/40	0.675

COMPLETE THE CHART!

	FRACTION	DECIMAL	PERCENT
19.	$\frac{3}{20}$	0.15	15%
20.	$\frac{7}{10}$	0.7	70%
21.	$1\frac{6}{25}$	1.24	124%
22.	$\frac{39}{100}$	0.39	39%
23.	$1\frac{5}{6}$	$1.8\overline{3}$	$183.\overline{3}\%$
24.	$\frac{1}{50}$	0.02	2%
25.	$\frac{5}{8}$	0.625	62.5%
26.	$\frac{4}{9}$	$0.\overline{4}$	$44.\overline{4}\%$
27.	$2\frac{4}{5}$	2.8	280%
28.	$\frac{37}{40}$	0.925	92.5%

Name: _____ **Unit 6:** Proportional Relationships

Date: _____ **Per:** _____ **Homework 10:** Converting Fractions, Decimals, & Percents

**** This is a 2-page document! ****

Write each value as a FRACTION (or mixed number) in simplest form.

1. 0.74

$\frac{74}{100} = \boxed{\frac{37}{50}}$

2. 1.16

$1\frac{16}{100} = \boxed{1\frac{4}{25}}$

3. 0.275

$\frac{275}{1000} = \boxed{\frac{11}{40}}$

4. 65% → 0.65

$\frac{65}{100} = \boxed{\frac{13}{20}}$

5. 137% → 1.37

$\boxed{1\frac{37}{100}}$

6. 12.5% → 0.125

$\frac{125}{1000} = \boxed{\frac{1}{8}}$

Write each value as a DECIMAL.

7. $\frac{11}{20}$

$20\overline{)11.00}$ → 0.55

-100, 100, -100, 0

$\boxed{0.55}$

8. $\frac{6}{5} = 1\frac{1}{5}$

$5\overline{)1.0}$ → 0.2

-10, 0

$\boxed{1.2}$

9. $\frac{12}{18} = \frac{2}{3}$

$3\overline{)2.000}$ → $0.\overline{6}$

-18, 20, -18, 20, -18, 0

$\boxed{0.\overline{6}}$

10. 62.5%

0.625

11. 190%

1.90

12. 4.38%

0.0438

Write each value as a PERCENT.

13. 0.0017

0.17%

14. 0.52

52%

15. 1.325

132.5%

16. $\frac{5}{8}$

$8\overline{)5.000}$ → 0.625

-48, 20, -16, 40, -40, 0

$\boxed{62.5\%}$

17. $\frac{8}{18} = \frac{4}{9}$

$9\overline{)4.000}$ → $0.\overline{44}$

-36, 40, -36, 40, -36, 4

$\boxed{44.\overline{4}\%}$

18. $\frac{27}{25} = 1\frac{2}{25}$

$25\overline{)2.00}$ → 0.08

-200, 0

$\boxed{1.08}$

Directions: Complete the chart below.

	FRACTION	DECIMAL	PERCENT
19.	$\frac{17}{20}$	0.85	85%
20.	$\frac{53}{100}$	0.53	53%
21.	$1\frac{3}{4}$	1.75	175%
22.	$\frac{19}{40}$	0.475	47.5%
23.	$1\frac{3}{5}$	1.60	160%
24.	$\frac{2}{25}$	0.08	8%
25.	$\frac{9}{50}$	0.18	18%
26.	$\frac{57}{200}$	0.285	28.5%
27.	$\frac{5}{3}$	$1.\overline{6}$	$166.\overline{6}\%$
28.	$\frac{52}{125}$	0.416	41.6%
29.	$\frac{14}{16}$	0.875	87.5%
30.	$\frac{68}{125}$	0.544	54.4%

31. The oceans hold about 0.965 of the Earth's water. Write this value as a percent and a fraction.

$\frac{965}{1000} = \boxed{\frac{193}{200}\text{; } 96.5\%}$

32. Gia's home is now worth 128% of the amount she paid for it five years ago. Write this percent as a mixed number in simplest form.

$1.28 = 1\frac{28}{100} = \boxed{1\frac{7}{25}}$

33. Of the 45 games they have played so far this season, the baseball team has won 20 of them. What percent have they won?

$\frac{20}{45} = \frac{4}{9}$

$9\overline{)4.000}$ → 0.444, -36, 40, -36, 40, -36, 4

$\boxed{44.\overline{4}\%}$

34. Jackson's doctor recommends that he eat no more than 40 grams of fat per day. If he ate 62 grams on Friday, what percent of the recommended grams of fat did he eat?

$\frac{62}{40} = \frac{31}{20} = 1\frac{11}{20}$

$20\overline{)11.00}$ → 0.55, -100, 100, -100, 0

$1.55 \rightarrow \boxed{155\%}$

Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

Comparing
FRACTIONS DECIMALS, & PERCENTS

- To compare fractions, decimals, and percents, write them in the Same format.
- **Example:** Lexi, Jayce, and Trina were each given the same number of candy bars to sell for a school fundraiser. Lexi sold $\frac{18}{25}$ of her candy bars, Jayce sold 76% of his candy bars, and Trina sold 0.68 of her candy bars. Who sold the greatest number of candy bars?

Lexi: $25\overline{)18.00}$ → 0.72, −175, 50, −50, 0

Lexi: 0.72
Jayce: 0.76
Trina: 0.68
Jayce sold the most.

Compare the numbers by placing a <, >, or = symbol in the circle.

1. 15% (>) $\frac{1}{20}$
0.15 0.05
$20\overline{)1.00}$ → 0.05, −100, 0

2. 0.065 (<) 40%
0.4

3. 52% (<) $\frac{27}{50}$
0.52 0.54
$50\overline{)27.00}$ → 0.54, −250, 200, −200, 0

4. $\frac{11}{4}$ (=) 275%
$2\frac{3}{4}$ → 2.75
2.75
$4\overline{)3.00}$ → 0.75, −28, 20, −20, 0

5. 1.2% (>) 0.008
0.012

6. 62% (<) $\frac{15}{24}$ → $\frac{5}{8}$
0.62 0.625
$8\overline{)5.000}$ → 0.625, −48, 20, −16, 40, −40, 0

Ordering

FRACTIONS DECIMALS, & PERCENTS

7. 180% (>) 0.18

1.8

8. $\frac{7}{12}$ (<) 60%

$0.58\overline{3}$ 0.6

$$12\overline{)7.0000} = 0.58\overline{3}$$

-60, 100, -96, 40, -36, 40, -36, 4

9. Order from least to greatest: 48%, $\frac{9}{20}$, 0.425, $\frac{11}{25}$

$$20\overline{)9.00} = 0.45 \qquad 25\overline{)11.00} = 0.44$$

-80, 100, -100, 0 ; -100, 100, -100, 0

0.48 (4), 0.45 (3), 0.425 (1), 0.44 (2)

$0.425, \frac{11}{25}, \frac{9}{20}, 48\%$

10. Order from least to greatest: 130%, 1.75, $\frac{4}{3}$, $\frac{7}{5}$

$$3\overline{)4.000} = 1.3\overline{3} \qquad 5\overline{)7.0} = 1.4$$

-3, 10, -9, 10, -9, 10, -9, 1 ; -5, 20, -20, 0

1.30 (1), 1.75 (4), $1.3\overline{}$ (2), 1.4 (3)

$130\%, \frac{4}{3}, \frac{7}{5}, 1.75$

11. Order from greatest to least: $\frac{5}{6}$, 0.085, $\frac{17}{20}$, 9%

$$6\overline{)5.000} = 0.83\overline{3} \qquad 20\overline{)17.00} = 0.85$$

-48, 20, -18, 20, -18, 2 ; -160, 100, -100, 0

$0.8\overline{3}$ (2), 0.085 (4), 0.85 (1), 0.09 (3)

$\frac{17}{20}, \frac{5}{6}, 9\%, 0.085$

Name	Portion Walked
Cara	$\frac{2}{9}$ $0.\overline{2}$
Bryce	0.165
Tyler	$\frac{11}{40}$ 0.275
Julia	24.5% 0.245
Sam	$\frac{1}{5}$ 0.2

12. Five friends participated in a community run/walk. The portion that each person walked is given in the table to the left. List the names in order from greatest to least in terms of the distance they walked.

$$9\overline{)2.000} = 0.22\overline{2} \qquad 40\overline{)11.000} = 0.275 \qquad 5\overline{)1.0} = 0.2$$

-18, 20, -18, 20, -18, 2 ; -80, 300, -280, 200, -200, 0 ; -10, 0

Tyler, Julia, Cara, Sam, Bryce

Name: _____ **Unit 6:** Proportional Relationships

Date: _____ **Per:** _____ **Homework 11:** Comparing Fractions, Decimals, & Percents

**** This is a 2-page document! ****

Directions: Compare the values by placing a <, >, or = symbol in the circle.

1. 4.5% (<) 0.45

0.045

2. $\frac{17}{50}$ (<) 36%

0.34 0.36

$$\begin{array}{r} 0.34 \\ 50\overline{)17.00} \\ -150 \\ \hline 200 \\ -200 \\ \hline 0 \end{array}$$

3. 1.25 (>) 16.5%

0.165

4. 26% (=) $\frac{52}{200} = \frac{26}{100}$

0.26 0.26

5. 0.4 (>) 12%

0.12

6. $\frac{11}{5}$ (<) 225%

2.2 2.25

$\frac{11}{5} = 2\frac{1}{5}$

$$\begin{array}{r} 0.2 \\ 5\overline{)1.0} \\ -10 \\ \hline 0 \end{array}$$

7. 30% (>) 0.097

0.3

8. $\frac{5}{12}$ (<) 42%

$0.41\overline{6}$ 0.42

$$\begin{array}{r} 0.41\overline{6} \\ 12\overline{)5.000} \\ -48 \\ \hline 20 \\ -12 \\ \hline 80 \\ -72 \end{array}$$

9. 70% (<) $\frac{29}{40}$

0.7 0.725

$$\begin{array}{r} 0.725 \\ 40\overline{)29.000} \\ -280 \\ \hline 100 \\ -80 \\ \hline 200 \\ -200 \\ \hline 0 \end{array}$$

10. If about $\frac{7}{8}$ of Kansas is farmland and about 85% of Iowa is farmland, which state has the greater percentage of farmland?

$$\begin{array}{r} 0.875 \\ 8\overline{)7.000} \\ -64 \\ \hline 60 \\ -56 \\ \hline 40 \\ -40 \\ \hline 0 \end{array}$$

Kansas: 0.875

Iowa: 0.85

Kansas has more farmland.

11. Two cars drove the same distance beginning with the same amount of gas. Car A used 23% of its gas and Car B used 0.195 of its gas. Which car used the least amount of gas?

Car A: 0.23

Car B: 0.195

Car B used less gas.

12. To pass her test, Tori needs to answer at least 65% of the questions correct. If there were 60 questions and she got 42 correct, did she pass?

$\frac{42}{60} = \frac{7}{10} \rightarrow 0.7 \rightarrow 70\%$

Yes, she passed.

13. Jake is a baseball pitcher with an average strikeout rate of 18%. If he struck out 6 out of 30 batters in his last game, did he perform better or worse than his average?

$\frac{6}{30} = \frac{1}{5} \rightarrow 0.2 \rightarrow 20\%$

$5\overline{)1.0}$ → 0.2, -10, 0

Jake did better than his average.

Directions: Order each set of values from least to greatest.

14. $56\%, \frac{13}{25}, 0.6, \frac{5}{9}$

$0.56, 0.52, 0.6, 0.\overline{5}$

$25\overline{)13.00}$ → 0.52, -125, 50, -50, 0

$9\overline{)5.000}$ → $0.\overline{555}$, -45, 50, -45, 50, -45, 5

$\frac{13}{25}, \frac{5}{9}, 56\%, 0.6$

15. $\frac{4}{15}, 30\%, 0.035, \frac{1}{4}$

$0.2\overline{6}, 0.3, 0.035, 0.25$

$15\overline{)4.000}$ → $0.2\overline{66}$, -30, 100, -90, 100, -90, 10

$0.035, \frac{1}{4}, \frac{4}{15}, 30\%$

Directions: Order each set of values from greatest to least.

16. $1.1, \frac{1}{6}, 2.5\%, \frac{3}{25}$

$1.1, 0.1\overline{6}, 0.025, 0.12$

$6\overline{)1.000}$ → $0.1\overline{6}$, -6, 40, -36, 40, -36, 4

$25\overline{)3.00}$ → 0.12, -25, 50, -50, 0

$1.1, \frac{1}{6}, \frac{3}{25}, 2.5\%$

17. $\frac{5}{3}, \frac{7}{4}, 0.195, 139\%$

$1.\overline{6}, 1.75, 0.195, 1.39$

$3\overline{)5.000}$ → $1.\overline{66}$, -3, 20, -18, 20, -18, 20, -18, 2

$4\overline{)7.00}$ → 1.75, -4, 30, -28, 20, -20, 0

$\frac{7}{4}, \frac{5}{3}, 139\%, 0.195$

18. The table below gives the interest rates of four different savings accounts. Order the accounts from least to greatest.

Account	Rate
A	$\frac{1}{40}$
B	2.9%
C	0.0225
D	$\frac{3}{125}$

0.025 (3)

0.029 (4)

0.0225 (1)

0.024 (2)

$40\overline{)1.000}$ → 0.025, -80, 200, -200, 0

$125\overline{)3.000}$ → 0.024, -250, 500, -500, 0

C, D, A, B

Name: _____ **Math 6**

Date: _____ Per: _____ **Unit 6:** Proportional Relationships

Quiz 6-3: Fractions, Decimals, and Percents

Write each value as a FRACTION or MIXED NUMBER in simplest form.

1. 0.88

$\frac{88}{100} = \frac{22}{25}$

2. 1.6

$1\frac{6}{10} = 1\frac{3}{5}$

3. 34%

$0.34 = \frac{34}{100} = \frac{17}{50}$

4. 7.5%

$0.075 = \frac{75}{1000} = \frac{3}{40}$

Write each value as a DECIMAL.

5. $\frac{16}{25} = \frac{64}{100}$

0.64

6. $\frac{11}{6} = 1\frac{5}{6}$

$0.83\overline{3}$

$6\overline{)5.000}$

-48

20

-18

20

-18

2

7. 3%

8. 75.8%

Write each value as a PERCENT.

9. 0.825

10. 2.14

11. $\frac{9}{24} = \frac{3}{8}$

0.375

$8\overline{)3.000}$

-24

60

-56

40

-40

0

12. $\frac{7}{15}$

$0.46\overline{6}$

$15\overline{)7.000}$

-60

100

-90

100

-90

0

1.	$22/25$
2.	$13/5$
3.	$17/50$
4.	$3/40$
5.	0.64
6.	$1.8\overline{3}$
7.	0.03
8.	0.758
9.	82.5%
10.	214%
11.	37.5%
12.	$46.\overline{6}\%$

13. A company has 128% more employees this year compared to last year. Write this percent as a decimal.

13. 1.28

14. 65%

15. $\frac{33}{200}$

14. Kelly's goal is to run 120 miles this month. If she has ran 78 miles so far, what percent of her goal has she run?

$\frac{78}{120} = \frac{13}{20}$

$20\overline{)13.00}$ → 0.65

-120

100

-100

0

$0.65 \rightarrow 65\%$

15. On Trevor's vacation in Europe, it rained 16.5% of the days. What fraction of the days did it rain? Give your answer in simplest form.

$0.165 = \frac{165}{1000} = \frac{33}{200}$

Place a <, >, or = symbol in the circle to complete a true statement.

16. 12% (>) $\frac{1}{25} = \frac{4}{100}$

0.12 0.04

17. 1.9 (>) 84.5%

0.845

18. $\frac{11}{5}$ (<) 230%

2.30

$2\frac{1}{5} = 2\frac{20}{100}$

2.20

19. Order the list of values below from least to greatest: $\frac{8}{9}$, $\frac{4}{5}$, **0.895**, **9%**

$0.\overline{8}, 0.8, 0.895, 0.09$

19. 9%, $\frac{4}{5}$, $\frac{8}{9}$, 0.895

20. Order the list of values below from greatest to least: **0.125**, $\frac{5}{3}$, $\frac{11}{8}$, **130%**,

$\frac{5}{3} = 1\frac{2}{3}$ $\frac{11}{8} = 1\frac{3}{8}$

$0.125, 1.\overline{6}, 1.375, 1.3$

$3\overline{)2.000}$ → $0.66\overline{6}$

-18

20

-18

20

-18

2

$8\overline{)3.000}$ → 0.375

-24

60

-56

40

-40

0

20. $\frac{5}{3}$, $\frac{11}{8}$, 130%, 0.125

Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
Finding the **PERCENT OF A NUMBER**	➢ **To find the percent of a number:** Multiply the number by the equivalent decimal or fraction form of the percent. ➢ **Example:** Find 20% of 60

Method 1: Using the Decimal Form

$60 \times 0.2 = 12.0$

$20\% = 0.2$

$\boxed{12}$

Method 1: Using the Fraction Form

$20\% = 0.2 = \frac{2}{10} = \frac{1}{5}$

$60\left(\frac{1}{5}\right) = \boxed{12}$

EXAMPLES

Find the percent of the number.

1. 75% of 16

$75\% = 0.75 = \frac{75}{100} = \frac{3}{4}$

$16\left(\frac{3}{4}\right) = \boxed{12}$

2. 60% of 35

$60\% = 0.6 = \frac{6}{10} = \frac{3}{5}$

$35\left(\frac{3}{5}\right) = \boxed{21}$

3. 30% of 75

$30\% = 0.3$

$75 \times 0.3 = 22.5$

$\boxed{22.5}$

4. 24% of 20

$24\% = 0.24$

$20 \times 0.24 = 4.80$

$\boxed{4.8}$

5. 8% of 95

$8\% = 0.08$

$95 \times 0.08 = 7.60$

$\boxed{7.6}$

6. 70% of 48

$70\% = 0.7$

$48 \times 0.7 = 33.6$

$\boxed{33.6}$

7. 28% of 40

$28\% = 0.28$

$40 \times 0.28 = 11.20$

$\boxed{11.2}$

8. 87% of 150

$87\% = 0.87$

$150 \times 0.87 = 130.50$

$\boxed{130.5}$

9. 16% of 58

16% = 0.16

58
× 0.16
348
580
9.28

9.28

10. 120% of 80

120% = 1.2

80
× 1.2
160
800
96.0

96

11. 175% of 64

175% = 1.75

1.75
× 64
700
10500
112.00

112

12. 250% of 126

250% = 2.5

126
× 2.5
630
2520
315.0

315

APPLICATIONS

13. Ari took a test with 80 questions and got 85% of them correct. How many questions did she get correct?

85% = 0.85

80
× 0.85
400
6400
68.00

68 questions

14. Beth saves 15% of her paycheck each week. If her paycheck was $280, how much will she save?

15% = 0.15

280
× 0.15
1400
2800
42.00

$42

15. A salesman makes 6% commission on the sale of an appliance. What will he make if he sells a $800 dishwasher?

6% = 0.06

800
× 0.06
48.00

$48

16. Micah is buying an $84 watch. If he has a coupon for 35% off, how much will he save?

35% = 0.35

84
× 0.35
420
2520
29.40

$29.40

17. A 20-gallon gas tank is 39% full. How many gallons of gas are in the tank?

39% = 0.39

20
× 0.39
180
600
7.80

7.8 gallons

18. Kesha bought a ring for $95 and sold it for 160% of what she paid for it. How much money did she receive for the ring?

160% = 1.6

95
× 1.6
570
950
152.0

$152

WHY DID THE FARMER *plant his money?*

Directions: Find the percent of each number. Show all work on a separate sheet of paper. After completing each set, find matching answers. One will have a letter and the other a number. Write the letter in the matching numbered box at the bottom of the page.

SET 1

I.	60% of 25	15	4.	45% of 60	27
S.	20% of 380	76	15.	20% of 75	15
A.	75% of 36	27	10.	80% of 95	76
E.	35% of 240	84	2.	64% of 150	96
O.	120% of 80	96	6.	175% of 48	84

SET 2

R.	8% of 90	7.2	9.	32% of 40	12.8
H.	32% of 125	40	12.	6% of 75	4.5
S.	80% of 16	12.8	7.	160% of 25	40
K.	225% of 24	54	3.	78% of 80	62.4
M.	65% of 96	62.4	14.	5% of 144	7.2
I.	15% of 30	4.5	5.	40% of 135	54

SET 3

H.	125% of 14	17.5	8.	12% of 85	10.2
C.	4% of 215	8.6	13.	240% of 16	38.4
L.	30% of 128	38.4	17.	20% of 87.5	17.5
O.	60% of 21.5	12.9	1.	35% of 70	24.5
T.	25% of 98	24.5	16.	43% of 20	8.6
I.	75% of 13.6	10.2	11.	86% of 15	12.9

ANSWER:

1.	2.		3.	4.	5.	6.		7.	8.	9.		10.	11.	12.	13.		14.	15.	16.	17.	
T	O		M	A	K	E		H	I	S		S	O	I	L		R	I	C	H	!

Name: _____ **Unit 6:** Proportional Relationships

Date: _____ **Per:** _____ **Homework 12:** Percent of a Number

Directions: Find the percent of each number.

1. 40% of 35

35
x 0.4
14.0

14

2. 95% of 80

80
X0.95
400
7200
76.00

76

3. 25% of 72

72
X0.25
360
1440
18.00

18

4. 64% of 20

20
X0.64
80
1200
12.80

12.8

5. 12% of 15

15
X0.12
30
150
1.80

1.8

6. 37% of 140

140
X0.37
980
4200
51.80

51.8

7. 85% of 42

42
X0.85
210
3360
35.70

35.7

8. 175% of 84

1.75
x 84
700
14000
147.00

147

9. 320% of 60

3.2
x60
00
1920
192.0

192

10. In a recent survey of 140 students, 65% said they buy their lunch. Of the students surveyed, how many buy their lunch?

140
X0.65
700
8400
91.00

91 students

11. Savannah got her hair done. If it costs $120 and she tips her hairdresser 18%, how much tip will her hairdresser receive?

120
x0.18
960
1200
21.60

$21.60

12. Of the 180 days of school last year, Evan was absent 5% of them. How many days was he present?

180
X0.05
9.00

180
- 9
171 days

13. A puppy weighed 16 pounds when he was adopted from a shelter. If the puppy now weighs 230% of what he weighed when he was adopted, find his current weight.

16
X2.3
48
320
36.8

36.8 lb

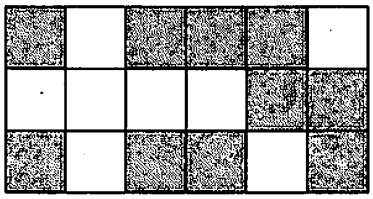
Unit 6 Test Study Guide
(Proportional Relationships)

Name: _____

Date: _____ Per: _____

Topic 1: Writing Ratios

1. Use the figure below to write each ratio in simplest form in three ways.



a) shaded squares to unshaded squares

$\frac{10}{8} = \frac{5}{4}$; 5 to 4 ; 5:4

b) unshaded squares to total squares

$\frac{8}{18} = \frac{4}{9}$; 4 to 9 ; 4:9

2. A jar contains 28 pennies, 16 nickels, 20 dimes, and 8 quarters. Write each ratio in simplest form.

a) quarters to nickels

$\frac{8}{16} = \frac{1}{2}$

b) pennies to dimes

$\frac{28}{20} = \frac{7}{5}$

c) nickels to total coins

$\frac{16}{72} = \frac{2}{9}$

d) silver coins to pennies

$\frac{44}{28} = \frac{11}{7}$

Topic 2: Equivalent Ratios

List two equivalent ratios for each ratio.

3. 3 to 1 — 6 to 2, 9 to 3

4. $\frac{42}{12}$ — $\frac{21}{6}$, $\frac{7}{2}$

Fill in the box with a value that makes the ratios equivalent.

5. 9:5 and $\boxed{36}$:20

6. $\frac{24}{57}$ and $\frac{8}{\boxed{19}}$

7. $\frac{\boxed{91}}{28}$ and $\frac{13}{4}$

Determine whether the ratios are equivalent.

8. $\frac{18}{12}$ and $\frac{6}{4}$

$\frac{18}{12} \downarrow \frac{3}{2}$; $\frac{6}{4} \downarrow \frac{3}{2}$ — yes

9. 4 to 3; 24 to 15

24 to 15 ↓ 8 to 5 — no

10. $\frac{9}{15}$ and $\frac{54}{90}$

$\frac{9}{15} \downarrow \frac{3}{5}$; $\frac{54}{90} \downarrow \frac{3}{5}$ — Yes

11. A radio station plays 3 commercials for every 8 songs it plays. If they played 72 songs during the morning segment, how many commercials did they play?

$\frac{3}{8} = \frac{?}{72}$

27 Commerc.

12. A bowl with 60 red candies and 24 green candies was used to decorate cookies. The same ratio of red to green candies in the bowl was used to decorate each cookie. If a cookie had 15 red candies, how many green candies did it have?

$\frac{60}{24} = \frac{15}{?}$

6 green Candies

Topic 3: Ratio Tables & Graphs

Complete each ratio table.

13.

Pizzas	Guests
2	15
6	45
12	90

14.

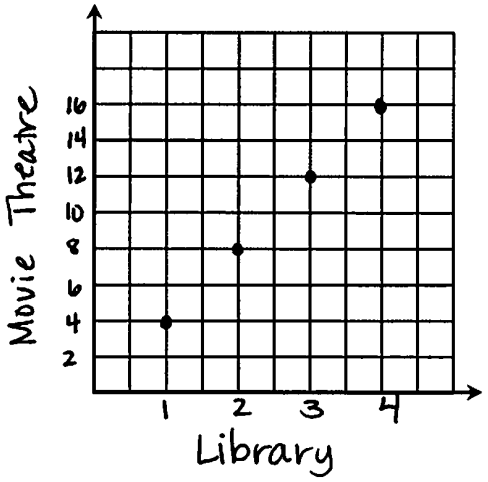
Lemonade (oz)	Calories
4	45
12	135
24	270

15.

Bowling Games	Cost ($)
1	6.50
2	13
8	52

16. Henry works one hour at the library for every four hours he works at the movie theater. Create a ratio table and graph to show this relationship.

Library Hours	1	2	3	4
Movie Theater Hours	4	8	12	16



Topic 4: Unit Rates

Write each rate as a unit rate.

17. 42 feet in 3 minutes

$\frac{42}{3} = 14$ ft/min

18. 72 ounces in 9 servings

$\frac{72}{9} = 8$ oz/serving

19. 243 customers in 9 hours

$\frac{243}{9} = 27$ cust/hr

20. In the 54th Super Bowl, Kansas City Chief's quarterback Patrick Mahomes completed 26 passes for 286 yards. How many yards per completed pass did he average?

$\frac{286}{26} = 11$ yd/pass

21. Three friends swam laps at the community pool. Who swam the most laps per minute?

	Minutes	Laps	
Ralph	12	8	$= 0.\overline{6}$ yd/min
Morgan	21	15	≈ 0.7 yd/min
Dane	18	10	$= 0.\overline{5}$ yd/min

Morgan swam the most.

Determine if Option A or Option B is the better deal. Justify your answer using unit prices.

22.

☐ **Option A:** $18 for 5 candles — **Unit Price:** $3.60/candle

☑ **Option B:** $28 for 8 candles — **Unit Price:** $3.50/candle

23.

☑ **Option A:** 20 pouches of fruit snacks for $2.40 — **Unit Price:** $0.12 / pouches

☐ **Option B:** 42 pouches of fruit snacks for $6.30 — **Unit Price:** $0.15 / pouches

Topic 5: Proportional Relationships

Determine whether the quantities shown in each table or graph represent a proportional relationship. If yes, give the constant of proportionality, *k*.

24.

Gas (gal)	Miles
1	18
2	36
3	54
4	72

Yes ; K=18

25.

Time (Hours)	Snowfall (Inches)
2	8
5	10
6	12
8	24

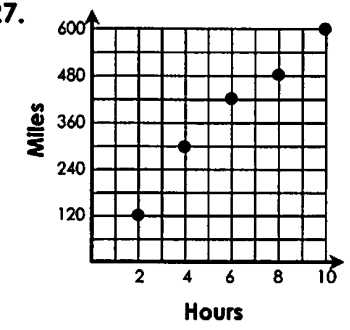
No

26.

Days Late	Late Fee ($)
5	$0.50
9	$0.90
14	$1.40
20	$2.00

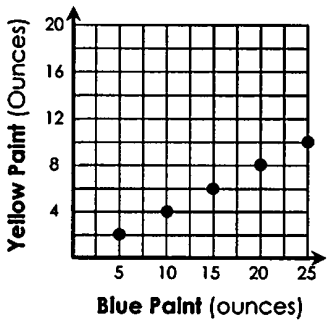
Yes ; K=0.1

27.



No

28.



Yes; $K=\frac{5}{2}$

The quantities in each table represent a proportional relationship. Find the missing value.

29.

Hours	Earnings ($)
6	54
16	144

30.

Vanilla Milkshakes	Chocolate Milkshakes
8	20
14	35

31.

Seconds	Feet
6	24
15	60

32. A 52-ounce bottle of lemonade contains 260 grams of sugar. How many grams of sugar are in 14-ounces of the lemonade?

Ounce	52	14
grams	260	?

70grams of sugar

33. Marla worked for 6 hours and earned $48 How many hours will she need to work to make $200?

Work	6	?
earned	48	200

8 hours

Topic 6: Fractions, Decimals, & Percents

Complete the chart below.

	FRACTION	DECIMAL	PERCENT
34.	$\frac{9}{20}$	0.45	45%
35.	$\frac{11}{4}$	2.75	275%
36.	$\frac{5}{8}$	0.625	62.5%
37.	$\frac{4}{15}$	$0.2\overline{6}$	$26.\overline{6}\%$
38.	$\frac{33}{40}$	0.825	82.5%
39.	$\frac{6}{5}$	1.2	120%
40.	$\frac{21}{125}$	0.168	16.8%
41.	$\frac{29}{50}$	0.58	58%
42.	$\frac{87}{200}$	0.435	43.5%
43.	$\frac{3}{50}$	0.06	6%

44. Of their first 18 games of the season, the Chicago Cubs lost 4 games and won the others. What percent of the games have they won?

$\frac{14}{18} = \frac{7}{9}$

$9\overline{)7.000}$ = $0.\overline{7}$

-63

70

-63

70

-63

7

77.7%

45. The high temperature has been below average 24 of the past 75 days. What percent of the days has the high temperature been below average?

$\frac{24}{75} = \frac{8}{25}$

$25\overline{)8.00}$ = 0.32

-75

50

-50

0

32%

46. A house was purchased, renovated, and sold for 170% of what it was originally purchased it for. Write this percent as a fraction in simplest form.

$170\% = 1.7 = 1\frac{7}{10}$

47. The sales tax rate in Arizona was 5.6% in 2020. Write this percent in decimal form.

0.056

Topic 7: Comparing Fractions, Decimals, & Percents

Compare by placing a <, >, or = symbol in the circle.

48. 97.5% (<) 1.5

0.975

49. $\frac{1}{6}$ (>) 2%

$0.16\overline{6}$

$6\overline{)1.000}$

-6

40

-36

40

-36

4

0.02

50. 150% (=) $\frac{12}{8}$

1.50

$\frac{12}{8} = \frac{3}{2}$

$= 1.5$

51. 0.1 (>) 4%

.04

52. Order from least to greatest.

0.125, 1%, 1.1, $\frac{1}{9}$

0.125, 0.01, 1.1, $0.\overline{1}$

③ ① ④ ②

$0.\overline{11}$

$9\overline{)1.000}$

-9

10

-9

10

-9

1

1%, $\frac{1}{9}$, 0.125, 1.1

53. Order from greatest to least:

$\frac{1}{6}$, 0.095, $\frac{1}{20}$, 15%

$0.1\overline{6}$, 0.095, 0.05, 0.15

① ③ ④ ②

$0.1\overline{6}$

$6\overline{)1.000}$

-6

40

-36

40

-36

4

0.05

$20\overline{)1.00}$

-100

0

$\frac{1}{6}$, 15%, 0.095, $\frac{1}{20}$

Topic 8: Percent of a Number

Find the percent of each number.

54. 80% of 45

45

x 0.8

36.0

36

55. 15% of 140

140

x 0.15

700

1400

21.00

21

56. 6% of 250

250

x 0.06

15.00

15

57. 64% of 40

40

x 0.64

160

2400

25.60

25.6

58. 130% of 90

1.3

x 90

00

1170

117.0

117

59. 275% of 80

2.75

x 80

000

22000

220.00

220

60. Elyse's cell phone plan allows up to 8 GB of data each month. She received an alert that she has used 95% of her data. How much data does she have left?

0.95

x 8

7.60

8.0

−7.6

0.4

0.4 GB

61. The average price of a gallon of gas in California is 160% the national average. If the national average is $2.60, what is the average price of a gallon of gas in California?

2.60

x 1.6

1560

2600

4.160

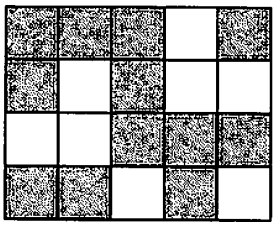
$4.16

Name: _____

Date: _____ Per: _____

Unit 6 Test

Proportional Relationships & Percents



1. Using the diagram to the left, write a ratio for the total number of squares to the number of unshaded squares in simplest form.

$\frac{20}{8} = \frac{5}{2}$

5 : 2

2. Amanda got 63 out of the 75 questions correct on her science test. Which ratio represents the number of questions she got incorrect to the number of questions she got correct?

63 Correct
12 incorrect

A. 4 to 21
B. 4 to 25
C. 21 to 4
D. 25 to 4

$\frac{12}{63} = \frac{4}{21}$

A

3. There are 16 yellow, 8 pink, and 12 blue highlighters in a drawer. What is the ratio of yellow highlighters to the total number of highlighters? Write your answer as a fraction in simplest form.

$\frac{16}{36} = \frac{4}{9}$

$\frac{4}{9}$

4. A bag contains apples and oranges. The ratio of apples to oranges in the bag is 8 to 3. Which of the following statements could be true?

A. There are exactly 20 apples and 6 oranges in the bag. → 10 to 3
B. There are exactly 32 apples and 15 oranges in the bag. → 32 to 15
C. There are exactly 16 apples and 12 oranges in the bag. → 4 to 3
D. There are exactly 24 apples and 9 oranges in the bag. → 8 to 3

D

5. Fill in the box with a value that will make the ratios equivalent.

4 : 9 and 32:72

6. There are 140 milligrams of caffeine in a 12-ounce cup of coffee. How many milligrams of caffeine are in 3 ounces of the same coffee?

A. 30
B. 35
C. 40
D. 45

mg	140	?
oz	12	3

B

7. Which ratios are equivalent? Check all that apply.

- ☑ $\frac{12}{16}, \frac{21}{28}$ → $\frac{3}{4}, \frac{3}{4}$
- ☐ $\frac{3}{15}, \frac{21}{70}$ → $\frac{1}{5}, \frac{3}{10}$
- ☐ $\frac{4}{6}, \frac{16}{28}$ → $\frac{2}{3}, \frac{4}{7}$
- ☑ $\frac{20}{32}, \frac{15}{24}$ → $\frac{5}{8}, \frac{5}{8}$
- ☑ $\frac{9}{27}, \frac{5}{15}$ → $\frac{1}{3}, \frac{1}{3}$

Fill in the missing values in the ratio tables below.

8.

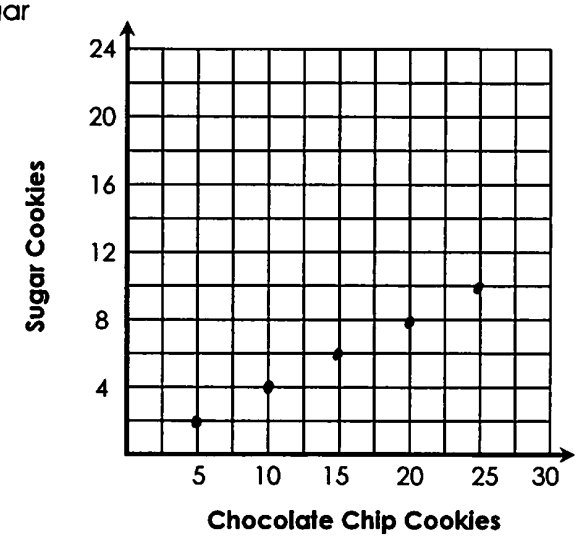
Tables	3	7	12
Guests	24	56	96

9.

Seconds	4	12	60
Push-ups	7	21	105

10. Mia sells 5 chocolate chip cookies for every 2 sugar cookies. Create a ratio table and graph to show this relationship.

Chocolate Chip Cookies	Sugar Cookies
5	2
10	4
15	6
20	8
25	10



11. A school has 34 teachers and 952 students. How many students per teacher are there?

$\frac{952}{34} = 28$

A. 26
B. 28
C. 32
D. 38

B

12. A water dispenser filled a 24-ounce water bottle in 15 seconds. At what rate was the dispenser filling the bottle?

$\frac{24}{15} = 1.6$

A. 1.4 ounces per second
B. 1.5 ounces per second
C. 1.6 ounces per second
D. 1.8 ounces per second

C

13. Finn needs 8 bags of mulch for his flower bed. If he can spend a maximum of \$30, what is the most he can pay per bag?

$\frac{30}{8} = 3.75$

A. \$3.25
B. \$3.50
C. \$3.75
D. \$3.85

C

14. The prices of three bottles of ketchup are given below. Which bottle costs the least per ounce?

Bottle	Size	Price	
A	25-oz	\$4.00	\$.16
B	21-oz	\$3.15	\$.15
C	16-oz	\$2.88	\$.18

B

15. In which tables is the relationship between the quantities proportional?

Table A	
2	12
4	12
6	12
8	12

Table B	
1	4
2	3
3	2
4	1

Table C	
2	6
5	15
7	21
10	30

A. Tables A and C
B. Tables B and C
C. Table B only
D. Table C only

D

16. In which table is the constant of proportionality 4?

A				
	4	8	12	16
	1	2	3	4

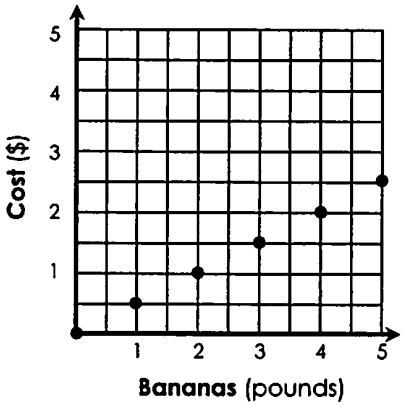
B				
	2	4	6	8
	8	16	24	32

C				
	1	2	3	4
	4	4	4	4

D				
	1	2	3	4
	5	6	7	8

B

17. What is the constant of proportionality in the graph below?



A. 0.5
B. 2
C. 1.5
D. 0.6

A

If the two quantities in the table represent a proportional relationship, determine the missing value.

18.

Miles	4	15
Taxi Fare ($)	10	?

A. $32.75
B. $34.50
C. $36.25
D. $37.50

D

19.

Minutes	?	30
Calories	200	240

A. 20
B. 24
C. 25
D. 28

C

20. A gas pump filled a 27-gallon tank in 6 minutes. How many minutes would it take to fill an 18-gallon tank?

gal	27	18
min	6	?

A. 3.5
B. 4
C. 4.5
D. 4.8

B

21. A catering service charges per person. If it costs $432 for a party of 48 people, how much will it cost for a party of 25 people?

cost	432	
people	48	25

A. $225
B. $230
C. $235
D. $240

A

22. Write the value below as a <u>decimal</u>.

135%

1.35

23. Which statement is true?

A. $\frac{7}{10} = 7\%$

B. $0.05 = \frac{1}{5}$

C. $1.8\% = 0.018$

D. $2.5 = 25\%$

C

24. Write the value below as a <u>percent</u>.

$\frac{14}{25}$

$$\begin{array}{r} 0.56 \\ 25\overline{)14.00} \\ -125 \\ \hline 150 \\ -150 \\ \hline 0 \end{array}$$

56%

25. Write the value below as a <u>percent</u>.

$\frac{28}{32} = \frac{7}{8}$

$$\begin{array}{r} 0.875 \\ 8\overline{)7.000} \\ -64 \\ \hline 60 \\ -56 \\ \hline 40 \\ -40 \\ \hline 0 \end{array}$$

87.5%

26. Write the value below as a <u>percent</u>.

$\frac{4}{3}$

$$\begin{array}{r} 1.3\overline{3} \\ 3\overline{)4.000} \\ -3 \\ \hline 10 \\ -9 \\ \hline 10 \\ -9 \\ \hline 10 \\ -9 \\ \hline 1 \end{array}$$

$133.\overline{3}\%$

27. Marty has been late for work 6 out of the past 80 working days. What percent of the days has she been late?

$\frac{6}{80} = \frac{3}{40}$

$$\begin{array}{r} 0.075 \\ 40\overline{)3.000} \\ -280 \\ \hline 200 \\ -200 \\ \hline 0 \end{array}$$

7.5%

28. Write the value below as a <u>fraction</u> in simplest form.

55%

$0.55 = \frac{55}{100} = \frac{11}{20}$

$\frac{11}{20}$

29. Which fraction correctly represents 0.3%?

A. $\frac{1}{3}$

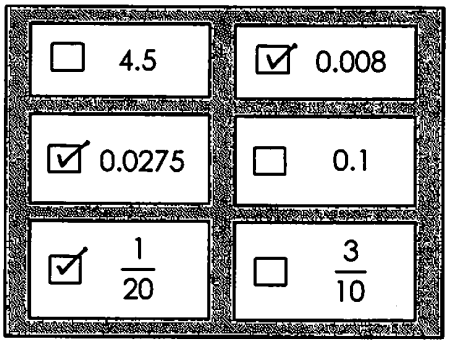
B. $\frac{3}{10}$

C. $\frac{3}{100}$

D. $\frac{3}{1000}$

D

30. Which values are less than 6%? Check all that apply. 0.06



0.05 0.3

31. In order to go from least to greatest, which value could be placed in the box?

$\frac{4}{5}$, ? , 90%

0.8 0.9

A. $\frac{19}{25} = 0.76$ **C.** $\frac{5}{6} = 0.8\overline{3}$

B. 8.5 **D.** 0.085

C

32. Using the letters, order the list of values below from greatest to least.

A	B	C	D
$\frac{2}{25}$	60%	0.095	$\frac{1}{8}$

$25\overline{)2.00}$ → 0.08 (-200, 0)

0.6

0.125

$8\overline{)1.000}$ → 0.125 (-8, 20; -16, 40; -40, 0)

B, D, C, A

33. What is 35% of 60?

60 × 0.35

300

1800

21.00

21

34. Tyler works 40 hours each week. If he has worked 72% of his usual work week, how many hours does he have left?

40 × 0.72

80

2800

2880

40.0 − 28.8 = 11.2

A. 28.8 hours

B. 27.2 hours

C. 12.8 hours

D. 11.2 hours

D

35. The finance charge on a credit card is 6% of the balance on the card at the end of the month. If Beth ends a month with a $350 balance, what is the finance charge for the month?

350 × 0.06 = 21.00

A. $18

B. $21

C. $24

D. $28

B

36. A city in Virginia averages 42 inches of rain each year. In 2016, the amount of rainfall was 140% the average. How many inches of rain fell that year?

42 × 1.4

168

420

58.8

A. 52.4 inches

B. 54.8 inches

C. 56.2 inches

D. 58.8 inches

D

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