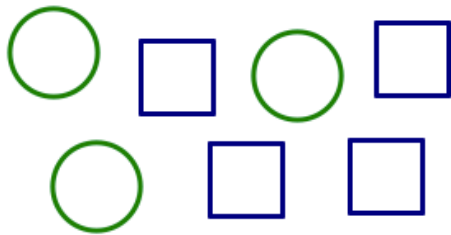


Ratios and Rates Unit Review

Directions:

- ✓ You must complete **at least** $\frac{4}{5}$ of the problems in this packet.
- ✓ There are 40 total problems, which means you must complete at least _____ problems.
- ✓ **SHOW ALL WORK** for full credit.
- ✓ You may use a calculator **only on questions with an asterisk (*)**.
- ✓ Good luck!

1) What is the ratio of squares to circles?



- A 4:3 C 3:7
 B 3:4 D 4:7

2) What is the ratio of circles to the total number of shapes?



- A $\frac{3}{4}$ C $\frac{2}{3}$
 B $\frac{1}{2}$ D $\frac{1}{3}$

3) The ratio of the number of crayons Jenny has to the number of crayons Ed has is 4 to 5. If Jenny has 24 crayons, how many crayons does Ed have?

4) The ratio of yellow tulip bulbs to red tulip bulbs in a package is 2 to 3. There are 100 tulip bulbs in the package. How many of each color bulb is there?

5) The table shows the calories in different number of small tangerines. Which expression does NOT show a way to find the number of calories in 10 tangerines?

Tangerines	2	4	6	8
Calories	80	160	240	320

A. 10×20

B. 10×40

C. $80 + 320$

D. $160 + 240$

- 6) Jose and Tia are selling candles for a fundraiser. Tia has earned \$15 to Jose's \$20. What is her ratio of earnings to his, in simplest (reduced) form?
- 7) Sophia's class sold 200 tickets to raise money for a new park. Three tickets were drawn and those people received prizes. Write the ratio of winners to total tickets sold.
- 8) A rug is 6 feet wide and 10 feet long. What is the ratio of length to width?
 A. 3:5
 B. 5:3
 C. 3:8
 D. 8:3
- 9) In Jaleel's chess club, 3 out of every 8 members are girls. What is the ratio of boys to girls in the club?
 A. 3 to 8
 B. 8 to 3
 C. 5 to 8
 D. 5 to 3

10) Coach bought 6 soccer balls for \$150. Which table correctly shows equivalent ratios for this cost?

A.

Number of balls	1	2	3	4	5	6
Cost	\$0	\$30	\$60	\$90	\$120	\$150

B.

Number of balls	1	2	3	4	5	6
Cost	\$25	\$50	\$75	\$100	\$125	\$150

C.

Number of balls	1	2	3	4	5	6
Cost	\$20	\$40	\$60	\$80	\$100	\$150

D.

Number of balls	1	2	3	4	5	6
Cost	\$120	\$126	\$132	\$138	\$144	\$150

Questions 11-12: Complete each ratio so that it will be equivalent to a ratio of 3:4.

11) 30 to _____

12) _____ to 16

Name _____ Date _____ Class _____

13) Soup costs \$10 for 3 cans. Josh spent \$40 on soup. How many cans did he buy?

14) Marcie planted 3 tomato plants in 45 minutes. At this rate, how long will it take her to plant 14 plants?

15) One recipe for cereal bars uses 5 cups of cereal and $2\frac{1}{2}$ cups of nuts. A different recipe uses 3 cups of cereal and 1 cup of nuts. Which recipe is more nutty?

16) David wants to fill his backyard swimming pool. His garden hose delivers 40 gallons in 5 minutes. How many gallons of water will be in the pool after 20 minutes?

17) David wants to fill his backyard swimming pool. His garden hose delivers 40 gallons in 5 minutes. How many gallons of water will be in the pool after 1 hour?

18) In a shipment of 1,000 bulbs, $\frac{1}{40}$ of the bulbs were defective. How many bulbs were NOT defective?

Name _____ Date _____ Class _____

19) Bennie Blinko owns a small bookstore in Cambridge, MA. Bennie is ordering some copies of Veronica Roth's new book. Printer A sells the books at \$350 per 100, and Printer B sells the books at \$150 per 40. Which company offers the lower price? Use the table below to compare prices, give your answer and explain.

	Printer A	Printer B
1		
40		\$150
100	\$350	

20) Wells College in Aurora, New York was previously an all-girls college. In 2005, the college began to allow boys to enroll. By 2012, the ratio of boys to girls was 3 to 7. If there were *200 more girls than boys* in 2012, how many boys were enrolled that year? Use a table to justify your answer.

21) A sixth grade is putting on a car wash to raise money for a trip. This table shows the number of cars they had washed at the end of each of the first 4 hours.

Hours	Cars Washed
1	10
2	20
3	30
4	40

If they continue washing cars at the same rate, how many cars will they have washed in 8 hours?

22) The veterinarian put Jeremy's dog Spot on a diet. On the diet, Spot lost 15 pounds in 60 days. At what unit rate did Spot lose weight?

- A. 0.25 pounds per day
- B. 0.5 pounds per day
- C. 2 pounds per day
- D. 4 pounds per day

Name _____ Date _____ Class _____

- 23) *Paul took a 42-mile bicycle trip. He bicycled $1\frac{1}{2}$ hours in the morning and 2 hours in the afternoon. What was his average speed in miles per hour?
- 24) *Dish soap comes in two sizes: 18 oz for 69¢ and 24 oz for \$1.28. Which size is the better buy?
- 25) A sailboat sailed for $3\frac{1}{4}$ hours at an average speed of 8 knots and then for 3 more hours at 5 knots. (1 knot is equal to 1 nautical mile per hour.) How far did the boat sail?
- 26) How can you find the unit price for trail mix if you know that someone paid \$2.78 for 8 ounces?
- A. Multiply \$2.78 by 8
 - B. Subtract 8 from \$2.78
 - C. Divide \$2.78 by 8
 - D. Divide 8 by \$2.78
- 27) Sarah spent \$4.26 for 3 pounds of fruit salad. What was the price per pound?
- 28) Paula bicycled for 20 minutes and covered 5 miles. What is her speed in miles per hour?
- 29) *On a fishing trip, Camie and her friends covered 77 miles at an average speed of 28 miles per hour. How long did this trip take?
- A. $1\frac{3}{4}$
 - B. $2\frac{1}{4}$
 - C. $2\frac{1}{2}$
 - D. $2\frac{3}{4}$

Name _____ Date _____ Class _____

- 30)** *Yola paid \$20 for 8.7 gallons of gas. Victor paid \$30 for 12.4 gallons. Compare the price per gallon to find out who got the better buy.
- 31)** Philip can run a mile in 6 minutes. What is his speed in miles per hour?
- A. 6 mi/hr
 - B. 10 mi/hr
 - C. 12 mi/hr
 - D. 60 mi/hr
- 32)** *Dried herbs come in two sizes. Which is the better buy, 30 grams for \$2.45, or 48 grams for \$3.67?
- 33)** A bookstore is having a sale in which you can get 4 notebooks for \$7.00 and 10 folders for \$2.50. How much will it cost Rico to buy 5 notebooks and 6 folders?
- 34)** Gloria rides a bike 8 miles in 40 minutes. Nanette rides a bike 5 miles in 30 minutes. Who will bike the farthest in 1 hour? How much farther?
- 35)** Ms.Czirr has to travel 390 miles on a highway. She drives 130 miles in 2 hours. If she has 7 hours to travel at that rate, will she arrive at her destination on time? Show your work!

36) At Mark's Hardware, a package of 8 hinges cost \$28. At Steve's Supplies, a package of 11 hinges costs \$38. Which statement is the most accurate?

- A. Mark's Hardware is the better buy because it sells hinges at \$3.50 per hinge.
- B. Mark's Hardware is the better buy because \$28 is less than \$38.
- C. Steve's Supplies is the better buy because it sells hinges at \$3.45 per hinge.
- D. Steve's Supplies is the better buy because you get more hinges.

Questions 37-40: Complete the questions based on the following description.

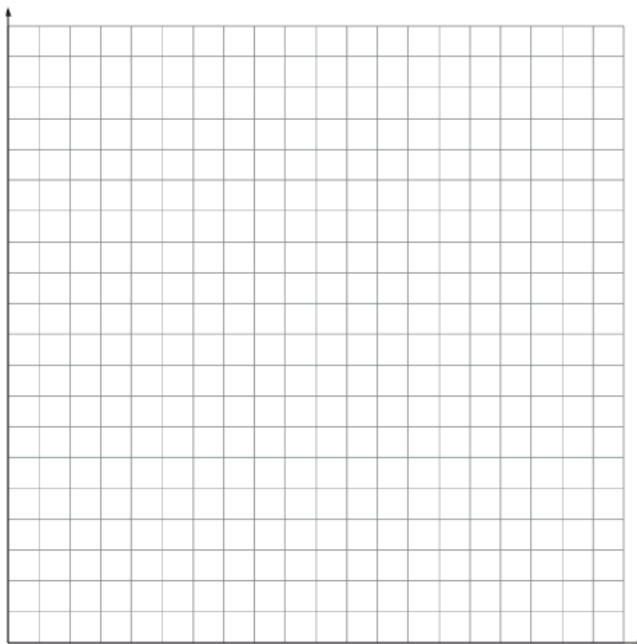
The most common women's shoe size in the U.S. is reported to be a size $8\frac{1}{2}$. A shoe store uses a table like the one below to decide how many pairs of size $8\frac{1}{2}$ shoes to buy when it places a shoe order from the shoe manufacturers.

Total Number of Pairs of Shoes Being Ordered	Number of Pairs of Size $8\frac{1}{2}$ to Order
50	8
100	16
150	24
200	32

37) What is the ratio of the number of pairs of size $8\frac{1}{2}$ shoes to the total number of pairs of shoes being ordered, in the simplest (reduced) form?

38) If there are a total of 350 pairs of shoes ordered, how many size $8\frac{1}{2}$ shoes will be ordered?

39) Plot the values from the table on a coordinate plane. Label the axes.



40) Use the graph to find the number of pairs of size $8\frac{1}{2}$ shoes the store orders for a total order of 125 pairs of shoes.