**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Ratios and Rates**

**STUDY GUIDE**

**Please show all work and circle your final answer. Make sure to simplify all answers.**

1. What is a ratio?
2. What is the ratio of squares to circles? Write the ratio in three different ways.
3. The Zoo must keep a 2:5 ratio of birds to snakes. If they have 12 birds, how many snakes should they have?

|  |  |
| --- | --- |
| Birds | Snakes |
| 2 | 5 |
| 12 | ? |

1. Brad charges $27 for 3 hours of soccer lessons. How much does Brad charge for 2 hours of soccer lessons?
2. Out of 4 tables, Cindy painted 3 red.

Write as a ratio. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ What type of ratio is this? Circle one:

 whole to part

 part to part

 part to whole

1. What is a unit rate? In words, give an example.
2. Melissa paid $56 for 7 tickets to the NC State Basketball game. How much was one ticket?
3. Eight meters of rope weighs 12 grams. How much will 1 meter of the same rope weigh?
4. Create a double number line to find 20 % of 80.
5. Hope likes to play basketball. Her current ratio of wins to losses is 6:5. If Hope has won 18 games, how many has she lost?
6. 36 is 90% of what number?
7. A TV salesman sold 21 TV’s last week. That was 30% of the TVs he sold for the month. How many TVs did he sell in last month?
8. For every three shirts that Brenda has, her sister Marsha has eight. Brenda has 48 shirts. How many does Marsha have?
9. The ratio of boys to girls who participated in the diving contest was 7:2. There were 35 boys. How many girls participated?

1. A 48 ounce container of ice cream contains 920 calories. About how many calories would there be in a 6-ounce serving?
2. Mark swam $\frac{4}{6}$ of a mile in 8 minutes. Sarah swam $\frac{3}{8 }$ of a mile in 3 minutes. Who swam farther in one minute?

Mark swam \_\_\_\_\_\_\_\_\_\_\_ of a mile in one minute.

Sarah swam \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a mile in one minute.

\_\_\_\_\_\_\_\_\_\_\_\_ swam farther in one minute.

1. The principal’s breakfast cost $35. She left a tip that was 20% of the bill. How much was the tip?

Write your answer.

1. The ratio of cups of grape juice concentrate to cups of water in punch is 1:3. If Sherry made 32 cups of punch, how many cups of grape juice concentrate did she need?
2. In a cookie mix, the ratio of cups of peanut butter chips to cups of chocolate chips is 2 to 4.

a. Complete the table below.

|  |  |
| --- | --- |
| **Peanut Butter Chips (x)** | **Chocolate Chips** **(y)** |
|  |  |
| 2 | 4 |
|  |  |

 b. Graph the ordered pairs from the table above.

 c. How many cups of peanut butter chips would be needed for 16 cups of chocolate chips?

 d. Write an equation to express the number of chocolate chips (y) for any amount of peanut

 butter chips (x).

1. If 30% of the students in Mr. Walls class like chocolate ice cream, then how many students are in Mr. Walls class if 6 like chocolate ice cream?