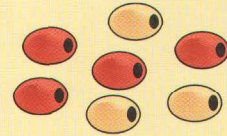


8.10 - Questions Handout #s 1 - 13

Key Ideas

- A part-to-part ratio compares two parts of a group.
The ratio of red beads to yellow beads is 4:3.
- A part-to-whole ratio compares a part of a group to the whole group.
The ratio of red beads to the total number of beads is 4:7.
- A proportion is a statement that two ratios are equal.

$$4:3 = 8:6 \text{ or } \frac{4}{3} = \frac{8}{6}$$



Communicate the Ideas

1. In your class, what is the ratio of the numbers of
 - a) boys to girls?
 - b) girls to students?
2. Consider this classification of the days of the week.
Bad days: Monday, Tuesday, Wednesday
Good days: Thursday, Friday
Excellent days: Saturday, Sunday
 - a) Write a ratio to compare the number of excellent days to the number of bad days.
 - b) Write a ratio to compare the number of excellent days to the number of days in a week.
 - c) How can you determine the number of good days in a year?
 - d) Describe some factors that might affect the way the days are classified.

Check Your Understanding

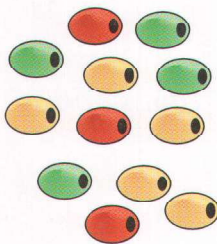
Practise

For help with questions 3 to 5, refer to Example 1.

3. Look at the beads.

Explain what each ratio represents.

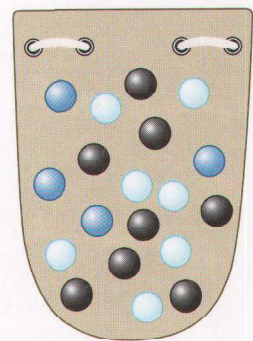
- a) 3:4
- b) 5:4
- c) 5:12
- d) 1:3



4. Look at the bag of marbles.

Draw a diagram to represent each ratio. Then, use numbers to write each ratio in simplest form.

- a) blue marbles:white marbles
- b) black marbles:blue marbles
- c) white marbles:total number of marbles



5. Write each ratio in simplest form.

- a) 5:10 b) 18:6
c) 14:35 d) 120:50

For help with questions 6 and 7, refer to Example 2.

6. What is the missing number in each proportion?

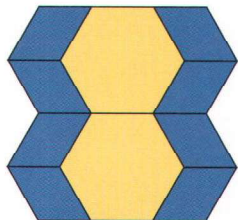
- a) $\frac{4}{7} = \frac{\blacksquare}{14}$ b) $\frac{\blacksquare}{5} = \frac{12}{15}$
c) $\frac{16}{36} = \frac{4}{\blacksquare}$ d) $\frac{2}{3} = \frac{\blacksquare}{15}$

7. Find the missing number in each proportion.

- a) $1:6 = \blacksquare:54$ b) $6:8 = 3:\blacksquare$
c) $5:20 = \blacksquare:4$ d) $\blacksquare:4 = 8:16$

Apply

8. Look at the shape pattern. The pattern has 10 blocks in total.



- a) Use a ratio to compare the number of yellow blocks to the total number of blocks. Write the ratio in simplest form.
b) How are the numbers of yellow blocks and blue blocks related?
c) Would your answer to part b) change if the pattern were repeated so it had a total of 50 blocks? Explain your reasoning.
9. Tami makes her own oil and vinegar dressing. Her recipe calls for 150 mL of olive oil and 200 mL of vinegar.
- a) Write a ratio, in simplest form, to compare the amounts of the two ingredients.
b) What amount of vinegar is needed to mix with 270 mL of olive oil?
c) If Tami wants to make 700 mL of the dressing, what quantity of each ingredient does she need?

10. A recipe for two-cheese lasagna calls for 200 g of ricotta and 300 g of mozzarella.



- a) Write a ratio, in simplest form, to compare the amounts of the two cheeses.
b) What amount of mozzarella is needed to make a lasagna that contains 800 g of ricotta?
c) What amount of each cheese is needed to make a lasagna that contains 1 kg of cheese in total?
11. A baseball team's win-loss record is 20:15.
- a) Write this ratio in simplest form. Explain what this ratio tells you.
b) If this trend continues, how many losses would you expect the team to have once they have won 60 games?
c) Approximately how many games would you expect the team to win over a 161-game season?
12. At a soccer tournament, one team's win-loss record was 12:8. A second team had a win-loss record of 15:5. Both teams had no ties.
- a) Express each ratio in simplest form.
b) How many games did each team play?
c) Explain how you solved parts a) and b).
13. Look at Example 2, part b). What other way can you calculate the amount of orange juice, once you know the amount of raspberry juice?
- a) Show your calculation.
b) Explain why this method works.