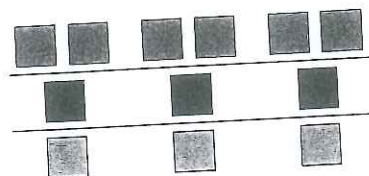


- A three-term ratio compares three quantities measured in the same units.

The ratio of red to black to blue tiles can be written as 6:3:3 or 6 to 3 to 3. The ratio in lowest terms is 2:1:1 or 2 to 1 to 1.

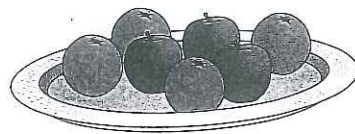


- A two-term ratio compares two quantities measured in the same units.

The ratio of black to total tiles can be written as 3:12 or 3 to 12. The ratio in lowest terms is 1:4 or 1 to 4. One out of every four tiles is black.

Communicate the Ideas

1. Janine wants to write the ratio of oranges to apples. How does she know whether to write 3:4 or 4:3?
2. Your friend missed the class when ratios were introduced. Use an example and draw a diagram to explain the difference between a part-to-part ratio and a part-to-whole ratio.
3. Give two examples of how ratios are used in daily life. Share your ideas with a classmate.
4. The fraction $\frac{2}{5}$ can be interpreted as two parts out of a total of five parts. Use a diagram to show an example of this part-to-whole ratio.



Check Your Understanding

Practise

For help with #5 to #8, refer to Example 1 on pages 47–48.

5. Write each ratio using ratio notation. Do not write the answers in lowest terms.
 - a) \$2 compared to \$8.
 - b) The width of the cover of this book compared to its length, in centimetres.
 - c) In a class, 14 of 30 students are girls. What is the ratio of boys to girls to total students?
 - d) Your age compared to that of a 28-year-old person.

6. Write each ratio in #5 as an equivalent ratio in lowest terms.
7. Write each ratio in fraction form. Do not write the answers in lowest terms.
 - a) You spend \$4 out of \$10.
 - b) A team won three games and lost six games. What is the ratio of games won to games played?
 - c) A bag contains 12 red and 3 blue beads. Compare blue beads to total beads.
 - d) A pond contains 27 guppies and 33 goldfish. What is the ratio of guppies to total fish?

8. Identify the missing number to make an equivalent fraction.

a) $\frac{1}{2} = \frac{\blacksquare}{8}$

b) $\frac{4}{5} = \frac{12}{\blacksquare}$

c) $\frac{2}{7} = \frac{\blacksquare}{21}$

d) $\frac{\blacksquare}{4} = \frac{3}{12}$

e) $\frac{21}{49} = \frac{3}{\blacksquare}$

f) $\frac{4}{\blacksquare} = \frac{12}{15}$

For help with #9 to #11, refer to Example 2 on pages 49–50.

- BONUS** 9. Use the data about wins and losses on school teams to answer the questions.

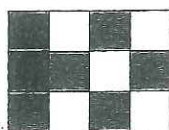
Sport	Wins	Losses
Hockey	9	6
Volleyball	10	5
Baseball	12	8

- a) Which sports have equivalent win-loss ratios? Show how you know.
 b) What is the ratio of wins to total games played for hockey? Give your answer as a fraction, a decimal, and a percent.

10. Tyler counted 20 cars in the school parking lot. Of these, 6 were red, 4 were green, and 1 was yellow.

- a) Draw a diagram to represent the situation.
 b) How many cars were not red, green, or yellow?
 c) What is the ratio of yellow to green to red cars?
 d) What is the ratio of red to total cars? Express the ratio as a fraction and a percent.

11. What tiles could be represented by each of the following ratios?



- a) 1 to 5 b) 1:6:5
 c) $\frac{1}{2}$ d) $\frac{11}{12}$

Apply

12. In a class of 32 students, there are 24 girls.

- a) What is the boys to total students ratio? Express the ratio as a fraction and a percent.
 b) What is the girls to boys ratio? Use ratio notation to express the ratio.

13. A soccer team played 28 games and won 4 out of every 7 games. There were no tied games.

- a) How many games did they lose?
 b) What was the team's win-loss ratio? Explain how you got your answer.
 c) If this trend continues, how many losses would you expect the team to have once they have won 20 games?

18. The ratio of the width to the length of the Canadian flag is 1:2.



- a) The flag on the cover of an atlas is 12 cm wide. How long is it?
 b) A large flag outside a Calgary school is 3 m long. What is its width?