

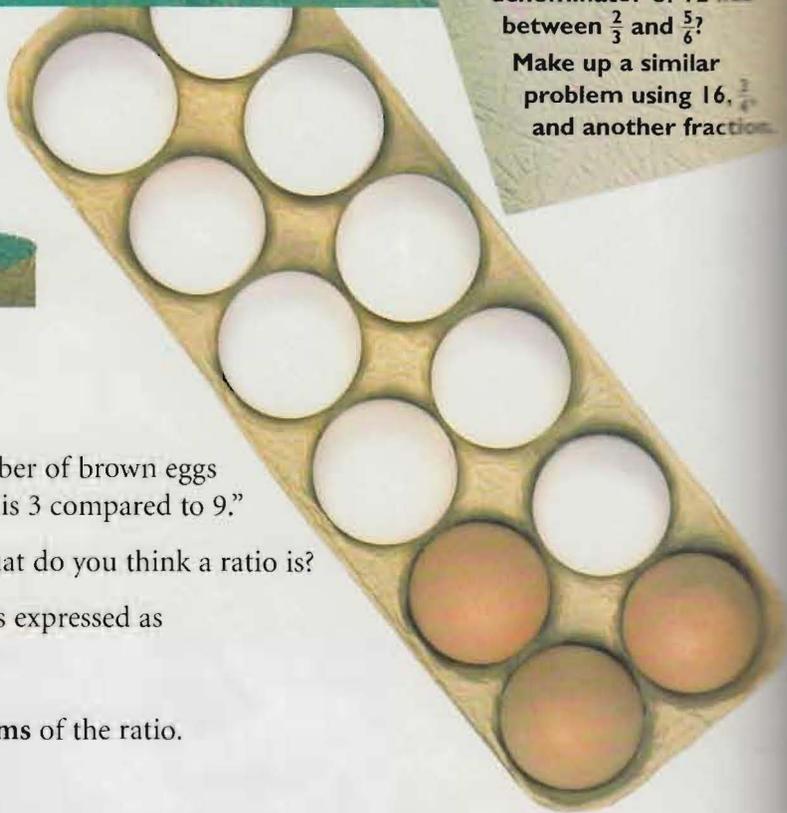
7.1 Describing Situations with Ratios

Warm Up

What fraction with a denominator of 12 lies between $\frac{2}{3}$ and $\frac{5}{6}$?

Make up a similar problem using 16, $\frac{3}{4}$, and another fraction.

Donna has 3 brown eggs and 9 white eggs in her carton of eggs.



Concept Development

1. What fraction of a dozen is brown?
2. What fraction is white?

Donna wrote in her journal, "The number of brown eggs compared to the number of white eggs is 3 compared to 9."

3. Donna's statement includes a **ratio**. What do you think a ratio is?

The ratio of brown eggs to white eggs is expressed as

3 to 9

The numbers 3 and 9 are called the **terms** of the ratio.

3 is the first term.

9 is the second term.

The word *to* can be replaced by a colon.

3 : 9

We still read the ratio as "3 to 9."

4. a) Write the ratio of white eggs to brown eggs.
b) What is the first term? the second term?

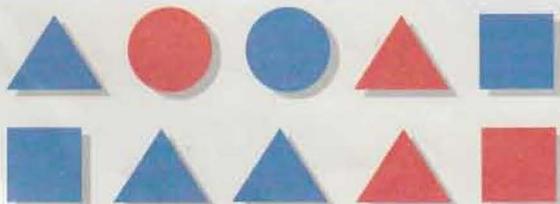


List examples of things around your home that are in the ratios 2 : 1, 5 : 1, and more than 10 : 1.

Understand and Apply



1. Write a ratio to show the number of
 - a) circles to squares
 - b) squares to triangles
 - c) circles to all shapes
 - d) red shapes to blue shapes
 - e) blue circles to blue triangles
 - f) red triangles to blue squares



2. In Problem 1, what is being compared in the following ratios?
 - a) 3 : 4
 - b) 1 to 2
 - c) 6 : 2
3. We can also write a ratio as a fraction. The ratio of Donna's brown eggs to white eggs is

3 : 9 or $\frac{3}{9}$ ← the first term
← the second term

- a) What does $\frac{3}{9}$ tell us about Donna's eggs?
- b) What is the ratio of white eggs to brown eggs in fraction form?

4. Write each fraction as a ratio with a colon.

- a) $\frac{1}{2}$ b) $\frac{4}{5}$ c) $\frac{7}{11}$ d) $\frac{4}{3}$ e) $\frac{13}{9}$

5. When Donna rearranged her eggs in bowls containing 3 eggs of the same color, she had 1 bowl of brown eggs and 3 bowls of white eggs.

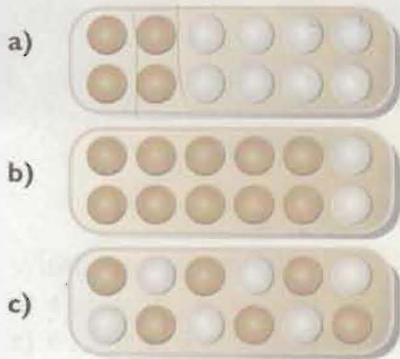
- a) What is the ratio of bowls containing brown eggs to bowls containing white eggs? Write the ratio in fraction form.
 b) Write the fraction $\frac{3}{9}$ in lowest terms. What do you notice?
 c) Write the ratio $\frac{3}{9}$ in lowest terms using a colon.
 d) Write the ratio of white eggs to brown eggs in lowest terms.



6. Write each ratio in lowest terms.

- a) 4 : 12 b) 7 : 14 c) 5 : 20
 d) 100 : 10 e) 35 : 5 f) 40 : 8

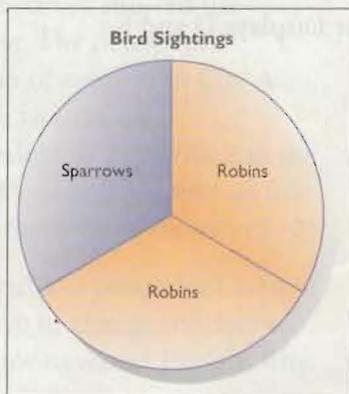
7. Write a ratio in three different ways to compare brown eggs to white eggs.



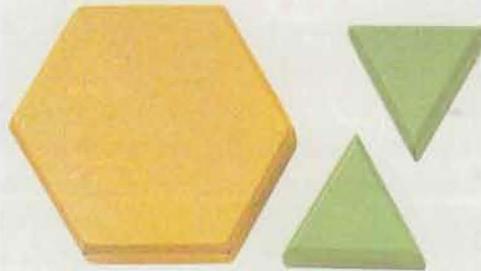
8. Write each ratio in Problem 7 in lowest terms.

9. The circle below is divided into three equal parts.

- a) How many parts represent sparrows?
 b) How many parts represent robins?
 c) What is the ratio of sparrows to robins?
 d) What is the ratio of robins to sparrows?



10. a) Use pattern blocks to make a pattern with yellow hexagons and green triangles. Use twice as many triangles as hexagons.



- b) Compare your pattern with your partner's. How many hexagons and triangles did each of you use?
 c) Write a ratio for each pattern.
 d) What is the ratio for each pattern in lowest terms?

11. a) What is meant by a ratio of 1 to 1?
 b) Write three ratios equivalent to 1 : 1 that are not in lowest terms.
 c) What things in your classroom are in the ratio 1 : 1?

In Your Journal

Describe how you would find the ratio of students to teachers in your school. Why would that not tell you how many students are in each class?