DIVIDING A QUANTITY IN A GIVEN RATIO

- Think of a ratio in terms of '**parts**'.
  A ratio of 2 : 3 has 2 parts of one quantity for every 3 parts of another quantity and a total of 5 parts.
- Using the **unitary method** to divide a quantity in a given ratio:
  - Find the total number of parts in the ratio.
  - Find the value of one part.
  - Find the value of the number of parts required in the ratio.

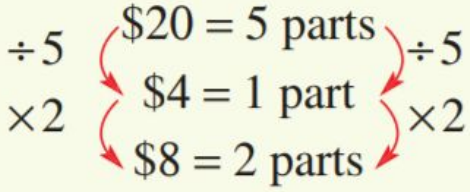
For example: Share \$20 in ratio of 2 : 3.

Think of sharing \$20 into 2 parts and 3 parts.

Total number of parts = 2 + 3 = 5.

Value of one part = \$20 ÷ 5 = \$4.

Therefore 2 parts = \$8, and 3 parts = \$12.



Example 12 Writing simplified rates

Express each of the following as a simplified rate.

a 12 students for two teachers

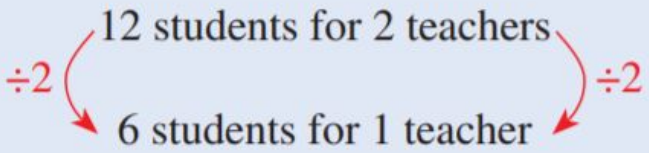
b $28 for 4 kilograms

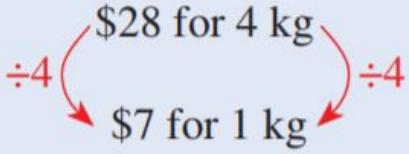
SOLUTION

a 6 students/teacher

b $7/kg

EXPLANATION

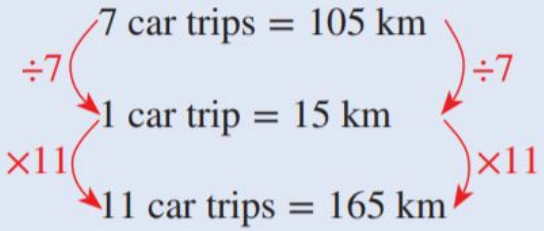




Example 14 Reviewing the unitary method

Andrea travels 105 km in seven identical car trips from home to school. How far would she travel in 11 such car trips?

SOLUTION



Andrea travels 165 km.

EXPLANATION

Find the value of 1 unit by dividing both quantities by 7.

Solve the problem by multiplying both quantities by 11.