

Rate problems can be solved using the "Rule of Three," so called because it involves only 3 steps.

**Example 2**

Three lemons cost \$1.35. What is the cost of 7 lemons?

**Solution**

Use the Rule of Three.

- 1. Statement of fact: 3 lemons cost \$1.35
  - 2. Rate for 1: 1 lemon costs  $\frac{\$1.35}{3} = \$0.45$  Divide by 3 to find the cost of 1 lemon.
  - 3. Rate for 7: 7 lemons cost  $7 \times \$0.45 = \$3.15$  Multiply by 7 to find the cost of 7 lemons.
- So, 7 lemons cost \$3.15.

**Practice**

Copy and complete each proportion.

- 1.  $\frac{15}{3} = \frac{\square}{1}$     2.  $\frac{21}{7} = \frac{\square}{1}$     3.  $\frac{30}{5} = \frac{\square}{1}$
- 4.  $\frac{88}{11} = \frac{\square}{1}$     5.  $\frac{49}{7} = \frac{\square}{1}$     6.  $\frac{80}{5} = \frac{\square}{1}$

Copy and complete each statement.

- 7. 48 bread rolls in 6 bags =  $\square$  rolls/bag
- 8. 140 students on 4 buses =  $\square$  students/bus
- 9. \$28 for 4 hours' work =  $\square$ /h
- 10. 300 km in 5 h =  $\square$  km/h
- 11. one dozen eggs for \$1.80 =  $\square$ /egg
- 12. 5 pairs of socks for \$25.50 =  $\square$ /pair

Write as a unit rate.

- 13. 1000 paper clips in 10 boxes
- 14. 60 m in 6 s
- 15. \$2.40 for 6 bagels
- 16. \$1245 for 5 plane tickets
- 17. 40 slices of apple pie for 20 people
- 18. earnings of \$62.50 for 5 h

**Problems and Applications**

- 19. Sumi drove at 75 km/h. How far did she drive in 4 h?
- 20. Eight bus tickets cost \$12. What is the cost of 5 tickets?

21. In 5 years, the average North American eats about 115 kg of fruit. How much fruit does the average North American eat in 7 years?

22. An aircraft flies 4900 km in 7 h. How far will it fly in 4.5 h?

23. The last RCMP Northern Dog Team Patrol left Old Crow in the Yukon on March 11, 1969. The team travelled 804.5 km in 26 days. What was the average rate of travel, to the nearest kilometre per day?

24. Speed is defined as  $\frac{\text{distance}}{\text{time}}$ .

a) If you increase the distance you travel in a certain length of time, do you increase or decrease your speed? Explain.

b) If you decrease the time you take to travel a certain distance, do you increase or decrease your speed? Explain.

25. a) Examine the job section of a newspaper and list 10 jobs that pay by the hour.

b) Rank the jobs from lowest paid to highest paid.

c) What kinds of jobs pay the higher wages?

d) Use your research skills to find the minimum wage for an adult and for a student.

e) Compare the minimum wages with your findings in parts a) and b).