Chapter 2 Review   **Page 70**   **Question 1**

Answer: **D**
$\dfrac{7}{50} = \dfrac{14}{100}$ is a proportion.

Chapter 2 Review   **Page 70**   **Question 2**

Answer: **B**
$\dfrac{3}{5}$ is a ratio.

Chapter 2 Review   **Page 70**   **Question 3**

Answer: **E**
$4:3:2$ is a three-term ratio.

Chapter 2 Review   **Page 70**   **Question 4**

Answer: **A**
$2.75 per tin is a unit price.

Chapter 2 Review   **Page 70**   **Question 5**

Answer: **G**
27 km/h is a unit rate.

Chapter 2 Review   **Page 70**   **Question 6**

a) The ratio of red squares to blue squares is $6:6$.

**b)** The ratio of blue squares to total squares is $6:12$.

c) Dividing each term of the ratio $6:12$ by 6 yields the equivalent ratio $1:2$. Dividing each term of the ratio $6:12$ by 2 yields the equivalent ratio $3:6$.

d) There are 6 red squares out of a total of 12 squares. Divide 6 by 12:
$6 \div 12 = 0.5 = 50\%$.
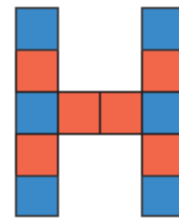
Chapter 2 Review   Page 70   Question 7

a) There are 6 two-digit numbers in the red hexagon. There are a total
of 16 two-digit numbers. The ratio of two-digit numbers in the red
hexagon compared to the total number of two-digit numbers is 6 : 16.
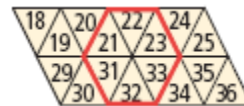
b) Divide each term of the ratio 6 : 16 by 2. The fraction in lowest

terms is $\dfrac{3}{8}$.

c) There are 8 two-digit numbers containing a 2. There are 4 two-digit numbers in the red
hexagon containing a 2. The ratio of two-digit numbers containing a 2 compared to the
number of two-digit numbers in the red hexagon that contain 2 is 8 : 4.

Chapter 2 Review   Page 70   Question 8

a) The ratio of yellow to red to silver vehicles is 1 : 2 : 5.

b) There are $5 + 4 + 2 + 1 = 12$ vehicles that are silver, blue, red, or yellow. There are 20
vehicles in all. Subtract 12 from 20: $20 - 12 = 8$. There are 8 vehicles that are not silver,
blue, red, or yellow.

c) There are 4 blue vehicles and 20 vehicles in total, so the ratio 4 to 20 could represent
blue vehicles to total vehicles.

d) There are 5 silver vehicles. There are 8 vehicles that are not silver, blue, red, or
yellow. The ratio 5 : 8 could represent the silver vehicles to the number of vehicles that
are not silver, blue, red, or yellow.

e) There are 5 silver vehicles and 20 vehicles in total, so the ratio of silver to total

vehicles is $\dfrac{5}{20} = \dfrac{1}{4} = 25\%$.
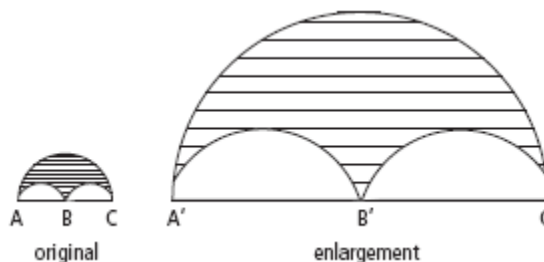
Chapter 2 Review   Page 70   Question 9

a) The team played 18 games and won 10 games, so it lost $18 - 10 = 8$ games.

b) The team won 10 games and lost 8 games, so the win–loss ratio is 10 : 8.

Chapter 2 Review   Page 70   Question 10

a) The length of A'B' is 24 mm. The length
of AB is 6 mm. The ratio of the length of
A'B' to the length of AB is 24:6.

b) The length of A'C' is 48 mm. The length
of AC is 12 mm. The ratio of the length of
A'C' to the length of AC is 48:12.

original   enlargement

c) To determine the multiplier, divide the length of the radius of the enlargement by the
length of the radius of the original: 24 mm ÷ 6 mm = 4. The multiplier is 4.

Chapter 2 Review   Page 70   Question 11

a) Divide 300 steps by 6 min: 300 steps ÷ 6 min = 50 steps/min

b) Divide $3.60 by 4 L: $3.60 ÷ 4 L = $0.90/L

c) Divide 2184 km by 3.5 h: 2184 km ÷ 3.5 h = 624 km/h

d) Divide 450 kg by 9 years: 450 kg ÷ 9 years = 50 kg/year

Chapter 2 Review   Page 71   Question 12

a) Answers may vary. Example: The ratio of
the cost of bananas in Winnipeg to the cost
in Little Grand Rapids is 4.98:13.95.

b) Answers may vary. Example: The cost of
3 kg of bananas in Winnipeg expressed as a
rate is $4.98/3 kg.

Item	Cost in Winnipeg	Cost in Little Grand Rapids
3 kg bananas	$4.98	$13.95
Mini ravioli (720 mL)	$2.29	$5.49
Milk (1 L)	$1.39	$4.09

c) The unit price of bananas in Winnipeg is $4.98 divided by 3 kg: $4.98 ÷ 3 kg =
$1.66/kg. The unit price of bananas in Little Grand Rapids is $13.95 divided by 3 kg:
$13.95 ÷ 3 kg = $4.65/kg. The difference in price/kg is $4.65 − $1.66 = $2.99/kg.

Chapter 2 Review   Page 71   Question 13

Appliance	Time On (h)	Monthly Cost ($)
Fridge	240	12.11
Computer and monitor	120	4.26
Television	180	3.46
Treadmill	15	3.99

a) Fridge: Multiply $12.11 by 100 to convert to cents: $12.11 × 100 = 1211¢. To determine the unit cost, divide 1211¢ by 240 h: 1211¢ ÷ 240 h = 5.0¢/h.
Computer and monitor: Multiply $4.26 by 100 to convert to cents: $4.26 × 100 = 426¢. To determine the unit cost, divide 426¢ by 120 h: 426¢ ÷ 120 h = 3.6¢/h.
Television: Multiply $3.46 by 100 to convert to cents: $3.46 × 100 = 346¢. To determine the unit cost, divide 346¢ by 180 h: 346¢ ÷ 180 h = 1.9¢/h.
Treadmill: Multiply $3.99 by 100 to convert to cents: $3.99 × 100 = 399¢. To determine the unit cost, divide 399¢ by 15 h: 399¢ ÷ 15 h = 26.6¢/h.

b) The television has the lowest rate of electricity consumption.

Chapter 2 Review   Page 71   Question 14

a) Shelley travelled 30 km/h for 2.5 h. To determine the distance she travelled, multiply 30 km/h by 2.5 h: 30 km/h × 2.5 h = 75 km.
Josh travelled 35 km/h for 1 hour and then travelled 25 km/h for 1.5 h. To determine the distance he travelled, multiply 35 km/h by 1 h, then add this amount to the product of 25 km/h and 1.5 h: 35 km/h × 1 h + 25 km/h × 1.5 h = 35 + 37.5 = 72.5 km.
Shelley travelled farther.

b) The difference in the distance travelled is 75 km − 72.5 km = 2.5 km.

Chapter 2 Review   Page 71   Question 15

a) Divide the numerator of the fraction by 4: 64 kg ÷ 4 =16 kg.

b) Divide the numerator of the fraction by 8: $84 ÷ 8 = $10.50.

c) Multiply the denominator of the fraction by 9: 2 min × 9 = 18 min.

Chapter 2 Review   Page 71   Question 16

a) Set up the proportion $\dfrac{3 \text{ bars}}{\$2.94} = \dfrac{8 \text{ bars}}{x}$, where x represents the cost in dollars. To

solve, multiply the denominator of the fraction by $2.\overline{6}$: $\$2.94 \times 2.\overline{6} = \$7.84$.

b) Set up the proportion $\dfrac{1 \text{ cm}}{150 \text{ km}} = \dfrac{x}{800 \text{ km}}$, where x represents the length in cm. To

solve, multiply the numerator by $5.\overline{3}$: $1 \text{ cm} \times 5.\overline{3} = 5.3 \text{ cm}$.

Chapter 2 Review   Page 71   Question 17

a) Set up the proportion $\dfrac{5 \text{ g}}{15 \text{ mm}} = \dfrac{28 \text{ g}}{x}$, where x represents the length stretched in cm.

To solve, multiply the denominator by 5.6: $15 \text{ mm} \times 5.6 = 84 \text{ mm}$. Change 84 mm to cm
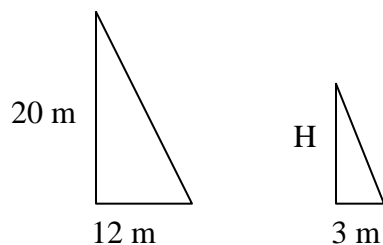by dividing by 10: $84 \text{ mm} \div 10 = 8.40 \text{ cm}$.

b) Set up the proportion $\dfrac{5 \text{ g}}{15 \text{ mm}} = \dfrac{x}{32 \text{ mm}}$, where x represents the mass in grams. To

solve, multiply the numerator by $2.1\overline{3}$: $5 \text{ g} \times 2.1\overline{3} = 10.7 \text{ g}$.

c) Convert 9.9 cm to mm by multiplying by 10: $9.9 \text{ cm} \times 10 = 99 \text{ mm}$.
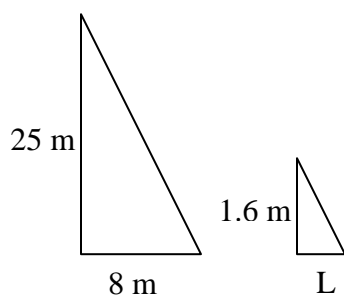
Set up the proportion $\dfrac{5 \text{ g}}{15 \text{ mm}} = \dfrac{x}{99 \text{ mm}}$, where x represents the mass in grams. To solve,

multiply the numerator by 6.6: $5 \text{ g} \times 6.6 = 33 \text{ g}$.

Chapter 2 Review   Page 71   Question 18

a)

Set up the proportion $\dfrac{20 \text{ m}}{12 \text{ m}} = \dfrac{H}{3 \text{ m}}$, where H represents the height of the tree in metres.
To solve, divide the numerator by 4: 20 m ÷ 4 = 5 m. The height of the tree is 5 m.

b)

Set up the proportion $\dfrac{25 \text{ m}}{8 \text{ m}} = \dfrac{1.6 \text{ m}}{L}$, where L represents the length of the shadow in
metres. To solve, divide the denominator by 15.625: 8 m ÷ 15.625 = 0.512 m. To convert
0.512 m to cm, multiply by 100: 0.512 m × 100 = 51 cm.