

Number applications practice

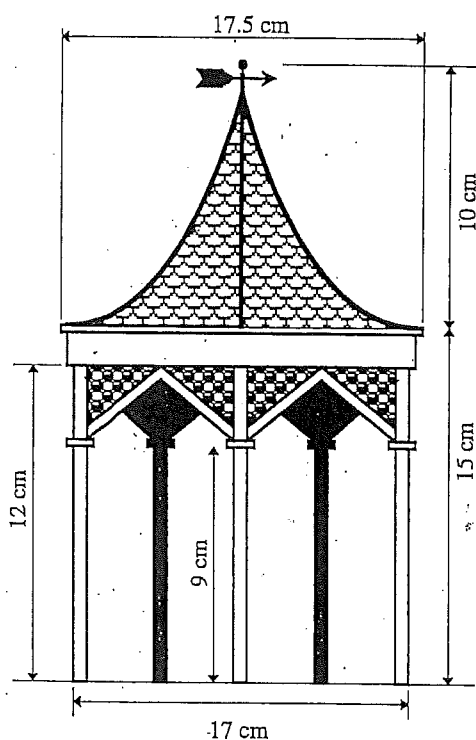
Skill 2.1 Sharing quantities in a given ratio

- 1 A small lottery prize is to be shared between Una and Colin in the ratio 7 : 6. If the prize is \$33.80, how much does each receive?
- 2 Christopher and Mathew are to share their 693 cars in the ratio of their ages. If Christopher is 7 and Mathew 4, how many cars will they each receive?

Skill 2.2 Using ratios within a population

- 1 Green and blue counters are placed in a bag in the ratio 1 : 7. If there are 581 blue counters:
 - (a) How many green ones are there?
 - (b) How many counters are in the bag?
- 2 Lengths of a licorice strap are to be shared among three children in the ratio of 1 : 2 : 3. If the shortest length is 0.02 m then how long are the other lengths, and what is the total length of the strap in centimetres?

Skill 2.3 Ratios and scale diagrams



This is a dimensioned sketch of a model of a gazebo to be built in the local gardens. If the scale of the model is 1 : 12, find the dimensions of the real building, in metres.

Skill 2.10 Converting rate units

- 1 Find the conversion factor to change
 - (a) speed units from cm/s to mm/s
 - (b) flow rate of kg/h to g/s
- 2 Find the conversion factor to change speed units from km/h to m/min, and use it to change the following speeds into m/min:
 - (a) 24 km/h
 - (b) 60 km/h
 - (c) 108 km/h

Skill 2.4 Increasing or decreasing quantities in a ratio

- 1 Natalie earns \$280 in a fast food shop in 4 days. At this rate how much will she earn in:
 - (a) 5 days
 - (b) a week
 - (c) a month
- 2 If I can dig 2 holes in a day and a half, how many days will it take me to dig:
 - (a) 10 holes
 - (b) 3 holes

Skill 2.5 Finding fractions of quantities

Simplify:

- 1 $\frac{4}{5}$ of \$12.30
- 2 $\frac{1}{9}$ of 12 kg
- 3 $\frac{6}{11}$ of \$13.20
- 4 $\frac{3}{7}$ of \$91

Skill 2.6 Expressing fractions of quantities as percentages

- 1 7.8 L of tomato juice is poured into a 12 L jug. What percentage of the jug is:
 - (a) full
 - (b) empty?
- 2 A family pays \$2880 interest on their \$24 000 housing loan. Express this as a percentage and so find the interest rate of the loan.

Skill 2.7 Finding percentages of quantities

Sportz Shoes are having a '12 $\frac{1}{2}$ % off everything' sale. How much is the saving on the cost of these goods:

- (a) socks \$2.40
- (b) skates \$150
- (c) runners \$32

Skill 2.8 Percentage increase or decrease

- 1 Find the scale factor which will
 - (a) decrease
 - (b) increase
 a quantity by 12%
- 2 Use a scale factor to decrease the price of these good by 5%:
 - (a) a chair \$42
 - (b) a desk \$92
 - (c) a car \$5000

Skill 2.9 Rates

- 1 Find the constant rate that a 12-L tank empties if it takes 3 hours to empty.

- 2 David is able to run at a constant speed of 10 km/h. How far will he run in:
 - (a) 4 hrs
 - (b) 6 $\frac{1}{3}$ hrs
 - (c) 20 mins
- 3 A rocket travels at a uniform speed of 20 m/s. How long will it take to travel:
 - (a) 30 m
 - (b) 55 m
 - (c) 110 m

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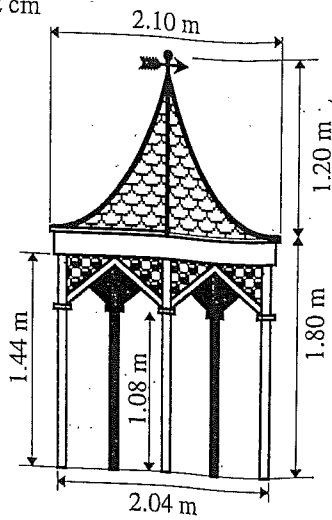
Skill 2.1

- Una \$18.20, Colin \$15.60
- Christopher 441, Matthew 252

Skill 2.2

- (a) 83 green (b) 664
- 0.04 m, 0.06 m, 12 cm

Skill 2.3



Skill 2.4

- (a) \$350 (b) \$490 (c) \$1960
- (a) $7\frac{1}{2}$ days (b) $2\frac{1}{4}$ days

Skill 2.5

- \$9.84 (b) $1\frac{1}{3}$ kg (c) \$7.20
- \$39 (e) $15\frac{1}{5}$ kg

Skill 2.6

- (a) 65% (b) 35%
- 12%

Skill 2.7

- \$0.30 (b) \$18.75 (c) \$4.00

MATHEMATICS : Revision & Practice

Skill 2.8

- (a) 0.88 (b) 1.12
- (a) \$39.90 (b) \$87.40 (c) \$4750.00

Skill 2.9

- 4 L/hr
- (a) 40 km (b) $63\frac{1}{3}$ km (c) $3\frac{1}{3}$ km
- (a) $1\frac{1}{2}$ s (b) $2\frac{3}{4}$ s (c) $5\frac{1}{2}$ s

Skill 2.10

- 10
- $\frac{5}{18}$ or 0.27
- Factor: $16\frac{2}{3}$
 - 400 (b) 1000 (c) 1800
 - $33\ 333\frac{1}{3}$