Multiple-choice section – choose the correct answer

Question 1 [4.1]

A soccer team has five boys and eight girls.

The ratio of boys to girls is:

A 5 : 12 B 7 : 12 C 5 : 8 D 7 : 5

Question 2 [4.1]

A soccer team has five boys and eight girls.

The number of girls written as a fraction of the total number of members in the soccer team is:

A  B  C  D 

Question 3 [4.2]

24 mm : 3 cm simplified is:

A 4 : 3 B 24 : 3 C 24 : 30 D 4 : 5

Question 4 [4.3]

8 : 34 as a unit ratio rounded to 2 decimal places is:

A 1 : 4.25 B 4 : 17 C 1 : 272 D 1 : 0.24

Question 5 [4.3]

The ratio of Nell’s height to Lucinda’s height is 1 : 0.8. If Nell is 1.65 m tall then Lucinda’s height is:

A 1.85 m B 2.45 m C 0.8 m D 1.32 m

Question 6 [4.4]

4 : 7 is equivalent to 52 : *k*

The value of *k* is:

A 59 B 91 C 56 D 63

Question 7 [4.5]

In the ratio 5 mm : 3 m, the scale factor is:

A 600 B 400 C 750 D 150

Question 8 [4.5]

If the scale is 1 : 50 000, the diagram length of 2 km is:

A 4 m B 4 mm C 4 cm D 40 cm

Question 9 [4.6]

When Simon and Michelle respectively share $63 in the ratio 3 : 4, this gives:

A Simon $47.25 and Michelle $15.75 B Simon $27 and Michelle $36

C Simon $15.75and Michelle $47.25 D Simon $36 and Michelle $27

Question 10 [4.7]

William takes 30 minutes to walk 3.6 km. His average speed in metres per minute is:

A 12 B 100 C 120 D 108

Question 11 [4.7]

If 350 g mushrooms cost $2.10, then 1 kg would cost:

A $7.35 B $6.10 C $4.50 D $6

Question 12 [4.7]

In a cricket match, Australia scored 156 runs in 30 overs. Australia’s run rate per over was:

A 5.2 B 5.5 C 5.9 D 5

Multiple-choice results: \_\_\_ /12

Short answer section

Question 13 3 marks [4.1, 4.2]

There are three jars filled with chocolates on a shelf. Jar A has 12 chocolates, Jar B has 16 chocolates and Jar C has 10 chocolates.

(a) Write the ratio of the numbers of chocolates in the three jars in simplest form.

(b) Write the number of chocolates in Jar A as a fraction in simplest form of the total number of chocolates in all three jars.

(c) Write an equivalent ratio to your answer in (a).

Question 14 6 marks [4.2, 4.6]

Zhen mixes kg of apple, kg pear and kg of pineapple to make a fruit salad. Write the following ratios in simplest form:

(a) the ratio of apple to pear in the fruit salad

(b) the ratio of apple to the total mass of the fruit salad

(c) the ratio of pineapple and pear to the total mass of the fruit salad.

Question 15 2 marks [4.4]

A cake recipe requires flour and sugar to be mixed in the ratio of 9 : 4.

(a) Rewrite this ratio as a unit ratio.

(b) If 80 gramsof sugar is used, how much flour is needed?

Question 16 3 marks [4.3]

A racing car has a top speed of 350 km/h. Find how many times faster the racing car is compared to:

(a) a cyclist travelling at 20 km/h

(b) a skateboarder moving at 15 km/h

(c) an aeroplane diving at 250 km/h.

Question 17 3 marks [4.4]

A recipe for scones uses 2.4 L of milk to make 60 scones. Find how much milk you would use if you wanted to adjust the recipe to make:

(a) 100 scones

(b) 50 scones

(c) 150 scones. (Hint: use your answers to (a) and (b)).

Question 18 4 marks [4.5]

A model car is made using the scale 1 cm : 0.6 m.

(a) Rewrite the scale as a scale ratio (unit ratio).

(b) What is the scale factor?

(c) If the length of the model car is 90 mm, find the actual length of the car in metres.

Question 19 4 marks [4.6]

A box of chocolates contains hard-centred chocolates and soft-centred chocolates.

(a) The ratio of hard-centred to soft-centred chocolates is 5 : 3. If there are 64 chocolates in the box, how many are hard-centred and how many are soft-centred?

(b) One more chocolate is added to the box to change the ratio to 8 : 5. What kind of chocolate was added, hard-centred or soft-centred?

Question 20 2 marks [4.7]

A nursery is offering a special deal of 3 potted plants for $14.70 . If the same price applies, how much would you pay for 11 potted plants?

Question 21 3 marks [4.7]

The zoo is 33.7 km from the aquarium.

(a) If you left the zoo at 9 : 20 am and arrived at the aquarium at 9 : 35 am, at what average speed were you driving? State your answer in km/h.

(b) If you walked around the zoo at an average speed of 1.92 km/h, what was this speed in metres per minute?

Question 22 4 marks [4.7]

Water is leaking out of a tap at a rate of 400 mL per hour.

(a) How much water will leak out in one day? Give your answer in litres.

(b) How much water would leak out in one year? Assume it is non-leap year. Give your answer in kilolitres.

(c) If water costs $20 for the first kilolitre and then $2 for every kilolitre after that, how much would the water leak cost for a year? Assume it is non-leap year.

Short answer results: \_\_\_ / 34

Extended answer section

Question 23 4 marks [4.7]

Jono wants to rent a scooter for 4 days and plans to drive 70 km per day. He has to choose between the following two deals:

First Choice Rental: $89 per day. The first 60 km are free and after that, there is a charge of  
$1.40 per kilometre.

Rent a Ride: $108 per day for unlimited kilometres.

Which company would be cheaper to use? Show all your working.

Question 24 6 marks [4.7]

To buy goods from overseas you must work out how many Australian dollars (A$) are equal to the amount in the overseas currency. On one particular day:    
• A$1.00 = US$0.7047

• A$1.00 = 4.64 Chinese yuan

• A$1.00 = 83.37 Japanese yen

Use the information to answer the questions.

(a) Convert $A70.00 to:

**(i)** $US

**(ii)** Chinese yuan

**(iii)** Japanese yen

(b) Convert these amounts to Australian dollars.

(i) US$50.00

(ii) 30.00 yuan

(iii) 2000 yen

Extended answer results: \_\_\_ / 10

TOTAL test results: \_\_\_ / 56