Multiple-choice section – choose the correct answer

Question 1 [4.1]

A soccer team has five 13 year olds and three 14 year olds.

The ratio of 13 year olds to 14 year olds is:

A 3 : 5 B 8 : 3 C 3 : 8 D 5 : 3

Question 2 [4.1]

A soccer team has five 13 year olds and three 14 year olds.

The number of 14 year olds written as a fraction of the total number of members in the soccer team is:

A  B  C  D 

Question 3 [4.2]

3 cm : 6 cm simplified is:

A 9 : 1 B 2 : 1 C 1 : 2 D 6 : 1

Question 4 [4.3]

12 : 48 as a unit ratio rounded to 2 decimal places is:

A 1 : 576 B 0.25 : 1 C 1 : 4 D 576 : 1

Question 5 [4.4]

1 : 5 is equivalent to *k :*45. The value of *k* is:

A 27 B 60 C 75 D 9

Question 6 [4.5]

The ratio 5 mm : 3 cm written as a scale ratio is:

A 5 : 3 B 1 : 6 C 1 : 30 D 0.6 : 1

Question 7 [4.5]

If the scale is 1 : 50, the diagram length of 4 m is:

A 200 m B 8 cm C 200 cm D 0.08 cm

Question 8 [4.6]

When Simon and Ava share $18 in the ratio 4 : 5, this gives:

A Simon $10 and Ava $8 B Simon $12 and Ava $6

C Simon $6 and Ava $12 D Simon $8 and Ava $10

Question 9 [4.7]

William takes 20 minutes to walk 240 m. His average speed in metres per minute is:

A 12 B 120 C 260 D 220

Question 10 [4.7]

If 200 g mushrooms cost $2.20, then 1 kg would cost:

A $22 B $4.40 C $11 D $1.10

Multiple-choice results: \_\_\_ /10

Short answer section

Question 11 3 marks [4.1, 4.2]

There are 3 red snakes, 2 yellow snakes and 5 green snakes left in a bag of jelly snakes.

(a) Write the ratio of red snakes to yellow snakes in simplest form.

(b) Write the number of green snakes as a percentage of the total number of snakes.

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

Question 12 6 marks [4.2]

Zhen mixes kg of apple, 5 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 13 2 marks [4.3]

A cake recipe requires flour and sugar to be mixed in the ratio of 3 : 2.

(a) Rewrite this ratio as a unit ratio.

(b) If 50 grams of sugar is used, how much flour is needed?

Question 14 3 marks [4.3]

A racing car has a top speed of 500 km/h. Find how many times faster the racing car is compared to:

(a) a cyclist travelling at 50 km/h

(b) a skateboarder moving at 10 km/h

(c) an eagle diving at 20 km/h.

Question 15 4 marks [4.4]

Find the value of *a* in each case.

(a) 3 : 5 is an equivalent ratio to *a* : 15

(b) *a* : 18 is an equivalent ratio to 10 : 36

Question 16 4 marks [4.5]

A model car is made using the scale 1 cm : 1 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 60 mm, find the actual length of the car in metres.

Question 17 2 marks [4.6]

A box of chocolates contains hard-centred chocolates and soft-centred chocolates in the ratio 3 : 2.

If there are 50 chocolates in the box, how many are hard-centred and how many are soft-centred?

Question 18 2 marks [4.7]

The zoo is 33.7 km from the aquarium. If you left the zoo at 10:15 am and arrived at the aquarium at 10:45 am:

(a) How many hours did it take to get to the aquarium? Write your answer as a fraction of an hour, then as a decimal.

(b) Use the formula  to calculate your average speed in km/h.

Question 19 4 marks [4.7]

Water is leaking out of a tap at a rate of 300 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 a non-leap year. Give your answer in kilolitres (kL).

(c) If water costs $20 for the first kilolitre and then $1 for every kilolitre after that, how much would the water leak cost for a year? Assume it is a non-leap year.

Short answer results: \_\_\_ / 30

Extended answer section

Question 20 4 marks [4.7]

Tiles Warehouse has three different types of tiles on sale.

Matt tiles: 25 tiles for $200

Gloss tiles: 15 tiles for $135

Standard tiles: 20 tiles for $140

(a) For each type of tile, calculate the cost of one tile.

(b) Which tile is the best buy?

Question 21 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$0.8

• A$1.00 = 5 Chinese yuan

• A$1.00 = 75 Japanese yen

Use the information to answer the questions.

(a) Convert $A100.00 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) 2100 yen

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

TOTAL test results: \_\_\_ / 50