Multiple-choice section – choose the correct answer

Question 1 [4.1]

A swimming team has 18 seniors and 16 juniors.   
The ratio of seniors to the number of team members is best expressed as:

A 9 : 8 B 8 : 9 C 9 : 17 D 17 : 9

Question 2 [4.1]

A swimming team has 18 seniors and 16 juniors.   
The number of juniors written as a fraction of the number of seniors in the swimming team is:

A  B  C  D 

Question 3 [4.2]

3.2 km : 4000 cm simplified is:

A 1 : 1250 B 32 : 4 C 800 : 1 D 80 : 1

Question 4 [4.3]

1.4 : 4.62 as a unit ratio rounded to 2 decimal places is:

A 1 : 6.5 B 0.3 : 1 C 1 : 3.3 D 6.5 : 1

Question 5 [4.3]

The ratio of Nell’s height to Lucinda’s height is 1 : 1.15. If Nell is 1.52 m tall then Lucinda’s height to the nearest centimetre is:

A 132 B 174 C 175 D 180

Question 6 [4.4]

If *a* : *b* = 1.72 : 1 and *a* = 6.2, then *b*, correct to 2 decimal places, is:

A 0.28 B 0.27 C 3.61 D 3.60

Question 7 [4.5]

In the ratio 5 m : 10 cm, the scale factor is:

A 0.02 B 0.2 C 5 D 50

Question 8 [4.5]

If the scale is 1 : 100 000, the diagram length of  km is:

A 6.125 cm B 6.125 mm C 6.125 m D 61.25 cm

Question 9 [4.6]

When Simon and Ava share $112.05 in the ratio 4 : 5 respectively, this gives:

A Simon $49.80 and Ava $62.25 B Simon $89.64 and Ava $22.41

C Simon $22.41 and Ava $89.64 D Simon $62.25 and Ava $49.80

Question 10 [4.7]

Jack takes 10 minutes to walk 0.36 km. His average speed in metres per second is:

A 60 B 6 C 0.6 D 0.06

Question 11 [4.7]

If 280 g of mushrooms cost $2.10, then 2.5 kg cost:

A $18.75 B $7 C $5.5 D $31

Question 12 [4.7]

In a cricket match, Australia scored 244 runs in 50 overs. Australia’s run rate per over was:

A 4.8 B 4.88 C 4.92 D 5.2

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

Short answer section

Question 13 2 marks [4.1, 4.2]

There are three jars filled with coins on a shelf. Jar A has $12.60, Jar B has $16.80 and Jar C has $29.40.

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

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

Question 14 2 marks [4.6]

Shade the blocks below to show the ratio 2 : 1.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
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Question 15 6 marks [4.2]

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 16 2 marks [4.2]

Simplify the following ratios:

(a) 0.2 : 0.02

(b) 

Question 17 2 marks [4.4]

A recipe for pasta requires a 4 : 3 ratio of eggs to cups of flour. How many cups of flour should be used with 7 eggs?

Question 18 3 marks [4.4, 4.6]

A bottle contains 480 marbles.  are red and the rest are blue. What is ratio of blue marbles to red marbles?

Question 19 2 marks [4.4, 4.6]

In a bag there are milk chocolate, peanut and crispy M&Ms in the ratio 5 : 2 : 3. If there are 75 crispy M&Ms, how many M&Ms are there in total?

Question 20 2 marks [4.3]

(a) A jet has a top speed of 600 km/h. How many times faster is the jet compared to a cyclist travelling at 45 km/h?

(b) Which is the greater ratio, 3 : 5 or 7 : 9?

Question 21 4 marks [4.5]

A model building is made using the scale 1 cm : 0.96 m.

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

(b) What is the scale factor?

(c) If the height of the model building is 72 mm, find the actual height of the building in metres.

Question 22 4 marks [4.7]

The distance from Melbourne to Adelaide by car is 725 km.

(a) A non-stop train service takes 7.63 hours to make the trip. What is the speed (in km/h) of the train?

(b) If a car travels at the speed of 85.29 km/h for the same distance, how long would it take to complete the trip?

Question 23 4 marks [4.7]

Water is leaking out of a tap at a rate of 413 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 $15 for every kilolitre thereafter, how much would the water leak cost for a year? Assume it is non-leap year.

Short answer results: \_\_\_ / 33

Extended answer section

Question 24 4 marks [4.7]

Isaac wants to rent a scooter for 4 days and plans to drive 150 km in total. He has to choose between the following two deals:

First Choice Rental: $79 per day. The first 80 km are free and after that, there is a charge of $1.60 per kilometre.

Rent a Ride: $165 for every 1.5 days, with unlimited kilometres.

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

Question 25 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$0.7480

• A$1.00 = 8.05 Chinese yuan

• A$1.00 = 92.15 Japanese yen

Use the information to answer the questions.

(a) Convert A$150 to:

(i) US$

(ii) yuan

(iii) yen

(b) Convert these amounts to Australian dollars.

(i) US$32.00

(ii) 300 yuan

(iii) 4500 yen

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

TOTAL test results: \_\_\_ / 55