

Y7 Maths

Unit 8 Test

Name: _____

Multiplicative Reasoning

45mins (55mins extra timers)

Calculator Allowed

ANSWERS

1. (a) Complete this table.
Write a sensible unit for each measurement.
Three have been done for you.

	Metric	Imperial	
The length of your finger	cm.....	inches	BI
The distance between America and England	kilometres	miles...	BI
The amount of petrol in a petrol tank	litres..	gallons	BI

(3)

- (b) Change 3 metres to centimetres.

.....300.....cm BI

(1)

- (c) Shalim says 1.5 km is less than 1400 m.
Is he right?
Explain your answer.

.....1500 > 1400 or 1.5 > 1.4..... BI

(1)
(Total 5 marks)

2. (a) (i) Change 5.6 metres to centimetres.

.....560.....cm BI

- (ii) Change 6700 millilitres to litres.

.....6.7.....litres BI

(2)

- (b) Write down the name of the metric unit which is usually used to measure the weight of a person.

kg BI

(1)
(Total 3 marks)

3. Simplify the ratio 12 : 16

.....3:4..... BI

(Total 1 mark)

4. There are 30 students on a school trip.
12 of the students are girls.
The rest are boys.

Find the ratio of the number of girls to the number of boys.
Give your ratio in its simplest form.

$$12:18 \text{ m1}$$

$$\frac{2:3}{\text{A1}} \quad \text{(Total 2 marks)}$$

5. Alex and Ben were given a total of £240
They shared the money in the ratio 5 : 7

Work out how much money Ben received.

$$240 \div 12 = 20 \text{ m1}$$

$$\pounds 140 \text{ A1} \quad \text{(Total 2 marks)}$$

6. There are 21 questions in a science test.
Each question is on biology or on chemistry or on physics.

The numbers of questions on biology, chemistry and physics are in the ratios 20 : 10 : 5

- (i) Simplify fully the ratio

$$4:2:1 \text{ B1}$$

- (ii) What fraction of the questions are on chemistry?

$$\frac{2}{7} \text{ B2}$$

Allow B1 for $\frac{1}{7}$ or $\frac{4}{7}$ as their final answer

- (iii) Work out the number of questions that are on biology.

$$\frac{21}{7} = 3 \text{ m1}$$

$$3 \times 4 \text{ m1}$$

$$\frac{12}{\text{A1}} \quad \text{(Total 6 marks)}$$

7. Ryan has a model plane. The length of the model is 30 cm. The length of the real plane is 72 m.

Write a ratio of model length to real length in its simplest form.

$$\text{m1 } 0.3:72 \text{ or } 30:7200$$

$$\frac{1:240}{\text{A1}} \quad \text{(2 marks)}$$

8. Brass is made up of copper and zinc.
Every 100 grams of brass contains 20 grams of zinc.

- (a) Work out the weight of zinc in 60 grams of brass.

$$60 \div 5 \text{ m1}$$

$$\frac{12}{\text{A1}} \quad \text{(2)}$$

Brass contains 4 parts by weight of copper to 1 part by weight of zinc.

- (b) Work out the weight of copper in 350 grams of brass.

$$\text{m1 } 350 \div 5 = 70$$

$$\frac{280}{\text{A1}} \quad \text{(2)}$$

9. Margaret goes on holiday to Switzerland.
The exchange rate is £1 = 2.10 francs.
She changes £450 into francs.
How many francs should she get?

$$450 \times 2.1 \text{ m1}$$

$$\frac{945}{\text{A1}} \quad \text{(Total 2 marks)}$$

10. A shop sells 8 pencils for £1.68

Work out the cost of 3 of these pencils.

m1 $1 \text{ pen} = £0.21$
or 21p

63 A1
.....p
(2 mark)

11. Change 28 miles to kilometres.

m1 $\frac{28}{5} \times 8$ or 28×1.6

44.8 A1
..... km
(Total 2 marks)

12. Change 5 kg to pounds.

m1 5×2.2
↑
 ± 0.2

11 ± 1 A1
..... pounds
(Total 2 marks)

13. It takes 8 people 3 hours to paint a fence.

i) How long would it take 4 people to paint it?

B1 6 hours o.e.

ii) How long would it take 12 people to paint it?

B1 2 hours o.e.
(Total 2 marks)

14. Write the following ratio in their simplest form

i) $1 : 1.2$

B1 5 : 6

ii) $1 : \frac{1}{4}$

B1 4 : 1
(Total 2 marks)

15. Alan made an orange drink using the ratio of orange squash to water in the ratio 2:7. Bob made another drink using the ratio of orange squash to water in the ratio 5:17.

Which drink is stronger and why?

Alan Bob
 $2 : 7$ $5 : 17$
 $1 : 3.5$ $1 : 3.4$
B1 B1

C1
Bob and less water
for every part of orange
o.e.

(Total 3 marks)

16. Hasan spent $\frac{1}{2}$ of his money on sweets, $\frac{1}{3}$ on pens and saved rest. Write the ratio he spent on sweets, pens and saved as a ratio in its simplest form.

$\frac{1}{2} + \frac{1}{3} = \frac{5}{6}$ m1

Savings = $\frac{1}{6}$ m1

(Total 2 marks)

$\frac{1}{2} : \frac{1}{3} : \frac{1}{6}$ m1

$3 : 2 : 1$ A1

