5.2 Ratio and Proportion: Test Pack

Calculators not allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Share 80 sweets between Aisha and Luis in the ratio 3:5. How many sweets does Luis get?

(2)

---

2 Willow, Femi and Uma share 286 stickers in the ratio 7:4:2.

How many stickers does Uma get?

Answer: ___

(2)

---

3 A shop sells 2 pens for 86p and 6 pens for 86p.

Which pack is better value for money? Write the number of pens in the pack.

Answer: ___

(2)

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4 Write the ratio 18:9 in its simplest form.

Answer: ___

(2)

---

5 A mixture contains sugar and water in the ratio 5:12. A chef needs 170 g of mixture. How much sugar should he use? Show your method.

(3)

---

6 A school orders fruit boxes in the ratio apples:bananas:pears = 4:3:1. If the school orders 320 pieces of fruit in total, how many pears do they order?

(2)

---

7 Tom says that if two quantities are in the ratio 6:9, you can write it as 2:3. Explain the mathematical step he uses and show the simplified ratio.

(2)

---

8 A poster is printed so that its width and height are in the ratio 5:8. The width is 50 cm. Explain whether the height could be 80 cm, showing your reasoning and giving the correct height if needed.

(3)

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9 A model of a ship is 3 cm long. The real ship is 400 times as long.

How long is the real ship in metres?

Answer: ___ m

(2)

---

10 Write the ratio 21:24 in its simplest form.

Answer: ___

(2)

---

11 A map is drawn with scale 1:25 000. A straight road on the map is 4.8 cm long. Work out the actual length of the road in metres.

(2)

---

12 8 pencils cost 656p.

How much do 10 pencils cost? Give your answer in pounds.

Answer: £___

(2)

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13 Willow and Amira share £162 in the ratio 5:1.

How much does Amira get?

Answer: £___

(2)

---

14 Write the ratio 36:8 in its simplest form.

Answer: ___

(2)

---

15 Chloe, Nia and Ravi share £308 in the ratio 7:1:6.

How much does Ravi get?

Answer: £___

(2)

---

16 For every 4 cats there are 3 dogs. There are 16 cats.

How many dogs are there?

Answer: ___

(2)

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17 Write the ratio 16:4 in its simplest form.

Answer: ___

(2)

---

18 A chemist mixes X and Y in the ratio 7:2. If there are 63 ml of X, how much Y is needed?

(2)

---

19 Noah and Bella share £51 in the ratio 2:1.

How much does Bella get?

Answer: £___

(1)

---

20 The ratio of apple trees to pear trees is 4:3. There are 49 trees altogether.

How many apple trees are there?

Answer: ___

(2)

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21 On a map, 1 cm shows 1 km. Two towns are 12 cm apart on the map.

How far apart are the towns in real life?

Answer: ___ km

(1)

---

22 For every 6 cats there are 1 dogs. There are 72 cats.

How many dogs are there?

Answer: ___

(2)

---

23 A model of a ship is 6 cm long. The real ship is 200 times as long.

How long is the real ship in metres?

Answer: ___ m

(2)

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Mark scheme · 5.2 Ratio and Proportion: Test Pack

A correct answer earns full marks unless the question asks for working, a method, proof or explanation.

Question 1

Divide 80 into 8 equal parts or show 80 ÷ (3+5) seen	M1
Luis gets 50 sweets cao	B1

Answer: **50**

Question 2

286 divided by 13 = 22 seen	M1
44 cao	A1

Answer: **44**

Question 3

finds the cost of one in each pack	M1
6 cao	A1

Answer: **6**

Question 4

divides both by a common factor	M1
2:1 cao	A1

Answer: **2:1**

Question 5

Total parts 5+12=17, find 1 part = 170 ÷ 17 = 10 or show equivalent	M1
Calculate sugar 5 × 10 or equivalent method	M1
Sugar = 50 g cao	B1

Answer: **50**

Question 6

Total parts 4+3+1=8, 320 ÷ 8 = 40	M1
Pears = 1 × 40 = 40 cao	B1

Answer: **40**

Question 7

Divide both parts by their highest common factor (3) or state dividing by 3	M1
Simplified ratio 2:3 cao	B1

Answer: **2:3**

Question 8

Show 50 corresponds to 5 parts so 1 part = 10 or equivalent	M1
Multiply 8 × 10 or state 8 parts = 80 but show reasoning about units	M1
Conclude height = 80 cm and explain this is correct cao	B1

Answer: **80**

Question 9

converts cm to m	M1
12 m cao	A1

Answer: **12 m**

Question 10

divides both by a common factor	M1
7:8 cao	A1

Answer: **7:8**

Question 11

Convert: 4.8 cm at 1:25 000 is 4.8 × 25 000 cm or show method	M1
Actual length 1,200 m cao	B1

Answer: **1200**

Question 12

656 divided by 8 = 82 seen	M1
£8.20 cao	A1

Answer: **£8.20**

Question 13

162 divided by 6 = 27 seen	M1
£27 cao	A1

Answer: **£27**

Question 14

divides both by a common factor	M1
9:2 cao	A1

Answer: **9:2**

Question 15

308 divided by 14 = 22 seen	M1
£132 cao	A1

Answer: **£132**

Question 16

16 divided by 4 seen	M1
12 cao	A1

Answer: **12**

Question 17

divides both by a common factor	M1
4:1 cao	A1

Answer: **4:1**

Question 18

63 corresponds to 7 parts so 1 part = 9	M1
Y = 2 × 9 = 18 ml cao	B1

Answer: **18**

Question 19

£17 cao	B1

Answer: **£17**

Question 20

49 divided by 7 seen	M1
28 cao	A1

Answer: **28**

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Question 21

12 km cao	**B1**

Answer: **12 km**

Question 22

72 divided by 6 = 12 seen	**M1**
12 cao	**A1**

Answer: **12**

Question 23

converts cm to m	**M1**
12 m cao	**A1**

Answer: **12 m**

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