5.1 Reasoning: Ratio and Proportion: 2-hour Pack

STA KS2 National Curriculum Mathematics - STA Reasoning Test Framework · Calculators not allowed · about 120 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 3 bookmarks cost 102p.

How much do 9 bookmarks cost? Give your answer in pounds.

Answer: £___

(2)

---

2 Ben, Hassan and Tom share 32 sweets in the ratio 5:7:4.

How many sweets does Tom get?

Answer: ___

(2)

---

3 Grace and Kiran share some money in the ratio 5:6. The difference between their shares is £9.

How much money is shared altogether?

Answer: £___

(2)

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4 Femi and Chloe share 189 marbles in the ratio 2:5.

How many marbles does Chloe get?

Answer: ___

(2)

---

5 A recipe for rice pudding for 8 people uses 350 ml of milk.

How much milk is needed for 4 people?

Answer: ___ ml

(2)

---

6 On a map, 1 cm shows 10 km. Two towns are 11 cm apart on the map.

How far apart are the towns in real life?

Answer: ___ km

(1)

---

7 Work out 1/2 of 20 cm.

Answer: ___

(1)

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8 3 badges cost 252p.

How much do 7 badges cost? Give your answer in pounds.

Answer: £___

(2)

---

9 A shop sells 2 juice packs for £1.23 and 5 juice packs for £3.85.

Which option costs less for each pack? Write 2 or 5 for the number of packs.

Answer: ___

(2)

---

10 Jade, Chloe and Callum share £286 in the ratio 3:6:4.

How much does Callum get?

Answer: £___

(3)

---

11 A shop sells 4 pasta packs for £1.88 and 10 pasta packs for £4.56.

Which option costs less for each pack? Write 4 or 10 for the number of packs.

Answer: ___

(2)

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12 Isla pays a deposit of 75% on a scarf that costs £195. The rest is paid later.

How much is paid later?

Answer: £___

(3)

---

13 Lily pays a deposit of 15% on a game that costs £110. The rest is paid later.

How much is paid later?

Answer: £___

(3)

---

14 For every 6 apple trees there are 3 pear trees. There are 60 apple trees.

How many pear trees are there?

Answer: ___

(2)

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15 8 stickers cost 264p.

How much do 7 stickers cost? Give your answer in pounds.

Answer: £___

(2)

---

16 £1 = 2 dollars.

How many dollars do you get for £60?

Answer: ___ dollars

(1)

---

17 A shop sells 3 pens for 42p and 8 pens for 121p.

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

Answer: ___

(2)

---

18 Write the ratio 24:16 in its simplest form.

Answer: ___

(2)

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19 £1 = 5 zlotys.

A toy costs 175 zlotys. How much is that in pounds?

Answer: £___

(1)

---

20 Tomasz is comparing two bags of the same pasta. A 400g bag costs £1.60. A 600g bag costs £2.16. Which bag is better value for money? Show working to justify your answer.

(2)

---

21 Mia pays a deposit of 30% on a book that costs £85. The rest is paid later.

How much is paid later?

Answer: £___

(3)

---

22 A shop sells 3 pens packs for £2.92 and 4 pens packs for £1.91.

Which option costs less for each pack? Write 3 or 4 for the number of packs.

Answer: ___

(2)

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23 A rectangle is 4 cm wide. It is enlarged by scale factor 8.

How wide is the enlarged rectangle?

Answer: ___ cm

(1)

---

24 7 notebooks cost 231p.

How much do 3 notebooks cost? Give your answer in pounds.

Answer: £___

(2)

---

25 In a sale, a scarf costs £75. The price is reduced by 20%.

What is the sale price?

Answer: £___

(3)

---

26 £1 = 5 dollars.

A toy costs 255 dollars. How much is that in pounds?

Answer: £___

(1)

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27 Write the ratio 15:9 in its simplest form.

Answer: ___

(2)

---

28 A model of a ship is 6 cm long. The real ship is 700 times as long.

How long is the real ship in metres?

Answer: ___ m

(2)

---

29 7 stickers cost 371p.

How much do 11 stickers cost? Give your answer in pounds.

Answer: £___

(2)

---

30 Declan buys 3 identical toy cars for a total of £7.20. Work out the cost of 8 of these toy cars.

(3)

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31 Sofia pays a deposit of 40% on a book that costs £190. The rest is paid later.

How much is paid later?

Answer: £___

(3)

---

32 Dev, Layla and Uma share £150 in the ratio 5:3:2.

How much does Uma get?

Answer: £___

(2)

---

33 For every 1 apple trees there are 7 pear trees. There are 7 apple trees.

How many pear trees are there?

Answer: ___

(2)

---

34 Kofi and Daisy share some money in the ratio 2:1. The difference between their shares is £6.

How much money is shared altogether?

Answer: £___

(2)

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35 5 magnets cost 90p.

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

Answer: £___

(2)

---

36 In a sale, a toy costs £35. The price is reduced by 15%.

What is the sale price?

Answer: £___

(3)

---

37 George and Ravi share some money in the ratio 2:8. The difference between their shares is £30.

How much money is shared altogether?

Answer: £___

(2)

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38 The ratio of red counters to blue counters is 6:8. There are 42 counters altogether.

How many red counters are there?

Answer: ___

(2)

---

39 Liam is looking at a map with a scale of 1:25000. The distance between two villages on the map is 6cm. Work out the real distance between the villages in kilometres.

(2)

---

40 A shop sells 4 pencils for 86p and 6 pencils for 98p.

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

Answer: ___

(2)

---

41 7 bookmarks cost 483p.

How much do 3 bookmarks cost? Give your answer in pounds.

Answer: £___

(2)

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42 A shop sells 2 sweets for 51p and 6 sweets for 62p.

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

Answer: ___

(2)

43 A recipe for biscuits for 6 people uses 50 g of butter.

How much butter is needed for 30 people?

Answer: ___ g

(2)

44 A shop sells 4 stickers for 66p and 6 stickers for 68p.

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

Answer: ___

(2)

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45 A model of a ship is 8 cm long. The real ship is 400 times as long.

How long is the real ship in metres?

Answer: ___ m

(2)

---

46 Write the ratio 16:6 in its simplest form.

Answer: ___

(2)

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Mark scheme · 5.1 Reasoning: Ratio and Proportion: 2-hour Pack

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

Question 1

102 divided by 3 = 34 seen	M1
£3.06 cao	A1

Answer: **£3.06**

Question 2

32 divided by 16 = 2 seen	M1
8 cao	A1

Answer: **8**

Question 3

1 parts = £9 so 1 part = £9 seen	M1
£99 cao	A1

Answer: **£99**

Question 4

189 divided by 7 = 27 seen	M1
135 cao	A1

Answer: **135**

Question 5

finds the amount for 1 person or a scale factor	M1
175 ml cao	A1

Answer: **175 ml**

Question 6

110 km cao	B1

Answer: **110 km**

Question 7

10 cm cao	B1

Answer: **10 cm**

Question 8

252 divided by 3 = 84 seen	M1
£5.88 cao	A1

Answer: **£5.88**

Question 9

works out a cost per pack for each option	M1
2 cao	A1

Answer: **2**

Question 10

286 divided by 13 = 22 seen	M1
multiplies by their share	M1
£88 cao	A1

Answer: **£88**

Question 11

works out a cost per pack for each option	M1
10 cao	A1

Answer: **10**

Question 12

deposit found	M1
subtraction	M1
£48.75 cao	A1

Answer: **£48.75**

Question 13

deposit found	M1
subtraction	M1
£93.50 cao	A1

Answer: **£93.50**

Question 14

60 divided by 6 = 10 seen	M1
30 cao	A1

Answer: **30**

Question 15

264 divided by 8 = 33 seen	M1
£2.31 cao	A1

Answer: **£2.31**

Question 16

120 dollars cao	B1

Answer: **120 dollars**

Question 17

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

Answer: **3**

Question 18

divides both by a common factor	M1
3:2 cao	A1

Answer: **3:2**

Question 19

£35 cao	B1

Answer: **£35**

Question 20

finds a unit price for each bag, e.g. 0.4p per g and 0.36p per g (or 40p and 36p per 100g) oe	M1
correct conclusion: 600g bag is better value oe, cao	A1

Answer: **600g bag (36p per 100g compared with 40p per 100g)**

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Question 21

deposit found	M1
subtraction	M1
£59.50 cao	A1

Answer: **£59.50**

Question 22

works out a cost per pack for each option	M1
4 cao	A1

Answer: **4**

Question 23

32 cm cao	B1

Answer: **32 cm**

Question 24

231 divided by 7 = 33 seen	M1
£0.99 cao	A1

Answer: **£0.99**

Question 25

reduction found	M1
subtracts from the original price	M1
£60 cao	A1

Answer: **£60**

Question 26

£51 cao	B1

Answer: **£51**

Question 27

divides both by a common factor	M1
5:3 cao	A1

Answer: **5:3**

Question 28

converts cm to m	M1
42 m cao	A1

Answer: **42 m**

Question 29

371 divided by 7 = 53 seen	M1
£5.83 cao	A1

Answer: **£5.83**

Question 30

unit cost = 720p / 3 = 240p oe	M1
240p x 8, dependent on M1	dM1
£19.20 cao	A1

Answer: **£19.20**

Question 31

deposit found	M1
subtraction	M1
£114 cao	A1

Answer: **£114**

Question 32

150 divided by 10 = 15 seen	M1
£30 cao	A1

Answer: **£30**

Question 33

7 divided by 1 = 7 seen	M1
49 cao	A1

Answer: **49**

Question 34

1 parts = £6 so 1 part = £6 seen	M1
£18 cao	A1

Answer: **£18**

Question 35

90 divided by 5 = 18 seen	M1
£1.80 cao	A1

Answer: **£1.80**

Question 36

reduction found	M1
subtracts from the original price	M1
£29.75 cao	A1

Answer: **£29.75**

Question 37

6 parts = £30 so 1 part = £5 seen	M1
£50 cao	A1

Answer: **£50**

Question 38

42 divided by 14 = 3 seen	M1
18 cao	A1

Answer: **18**

Question 39

6 x 25000 = 150000cm oe	M1
1.5km cao	A1

Answer: **1.5km**

Question 40

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

Answer: **6**

Question 41

483 divided by 7 = 69 seen	M1
£2.07 cao	A1

Answer: **£2.07**

Question 42

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

Answer: **6**

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Question 43

finds the amount for 1 person or a scale factor	**M1**
250 g cao	**A1**

Answer: **250 g**

Question 44

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

Answer: **6**

Question 45

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

Answer: **32 m**

Question 46

divides both by a common factor	**M1**
8:3 cao	**A1**

Answer: **8:3**

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