5.1 Reasoning: Ratio and Proportion: 1-hour Pack

STA KS2 National Curriculum Mathematics - STA Reasoning Test Framework · Calculators not allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Nadia makes a fruit drink by mixing orange juice and lemonade in the ratio 2:5. She makes 700ml of the drink, then adds a further 100ml of lemonade. Work out the new ratio of orange juice to lemonade in its simplest form.

(3)

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2 £1 = 4 zlotys.

How many zlotys do you get for £26?

Answer: ___ zlotys

(1)

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3 6 erasers cost 150p.

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

Answer: £___

(2)

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4 7 pencils cost 609p.

How much do 12 pencils cost? Give your answer in pounds.

Answer: £___

(2)

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5 Daisy and Yusuf share some money in the ratio 1:4. The difference between their shares is £21.

How much money is shared altogether?

Answer: £___

(2)

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6 Zara and Aaron share £51 in the ratio 1:2.

How much does Aaron get?

Answer: £___

(2)

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7 6 folders cost 444p.

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

Answer: £___

(2)

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8 Kofi and Victor share some money in the ratio 1:9. The difference between their shares is £56.

How much money is shared altogether?

Answer: £___

(2)

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9 Write the ratio 7:14 in its simplest form.

Answer: ___

(1)

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10 A recipe for rice pudding for 5 people uses 75 g of rice.

How much rice is needed for 15 people?

Answer: ___ g

(2)

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11 For every 1 apple trees there are 7 pear trees. There are 2 apple trees.

How many pear trees are there?

Answer: ___

(2)

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12 Write the ratio 45:27 in its simplest form.

Answer: ___

(2)

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13 Isla and Ivan share 264 marbles in the ratio 5:6.

How many marbles does Ivan get?

Answer: ___

(2)

---

14 Work out 1/5 of 20 g.

Answer: ___

(1)

---

15 For every 4 boys there are 1 girls. There are 20 boys.

How many girls are there?

Answer: ___

(2)

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16 Ivan pays a deposit of 15% on a game that costs £170. The rest is paid later.

How much is paid later?

Answer: £___

(3)

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17 A recipe for 8 flapjacks needs 150g of oats and 90g of butter. Sofia wants to make 20 flapjacks using the same recipe.

(a) Work out how many grams of oats she needs. **(2)**

.....

(b) Work out how many grams of butter she needs. **(1)**

.....

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18 In a sale, a toy costs £145. The price is reduced by 15%.

What is the sale price?

Answer: £___

(3)

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19 A rectangle is 2 cm wide. It is enlarged by scale factor 10.

How wide is the enlarged rectangle?

Answer: ___ cm

(1)

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20 Oscar, Chloe and Victor share 392 sweets in the ratio 2:6:6.

How many sweets does Oscar get?

Answer: ___

(3)

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21 A model of a ship is 2 cm long. The real ship is 800 times as long.

How long is the real ship in metres?

Answer: ___ m

(2)

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22 Chloe and Mateo share some money in the ratio 4:7. The difference between their shares is £36.

How much money is shared altogether?

Answer: £___

(2)

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23 A shop sells 2 cereal packs for £2.15 and 3 cereal packs for £2.36.

Which option costs less for each pack? Write 2 or 3 for the number of packs.

Answer: ___

(2)

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Mark scheme · 5.1 Reasoning: Ratio and Proportion: 1-hour Pack

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

Question 1

one part = 700 / 7 = 100ml oe	M1
orange = 200ml and new lemonade = 500 + 100 = 600ml oe	M1
1:3 oe cao (simplest form)	A1

Answer: **1:3**

Question 2

104 zlotys cao	B1

Answer: **104 zlotys**

Question 3

150 divided by 6 = 25 seen	M1
£2.25 cao	A1

Answer: **£2.25**

Question 4

609 divided by 7 = 87 seen	M1
£10.44 cao	A1

Answer: **£10.44**

Question 5

3 parts = £21 so 1 part = £7 seen	M1
£35 cao	A1

Answer: **£35**

Question 6

51 divided by 3 = 17 seen	M1
£34 cao	A1

Answer: **£34**

Question 7

444 divided by 6 = 74 seen	M1
£8.14 cao	A1

Answer: **£8.14**

Question 8

8 parts = £56 so 1 part = £7 seen	M1
£70 cao	A1

Answer: **£70**

Question 9

1:2 cao	B1

Answer: **1:2**

Question 10

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

Answer: **225 g**

Question 11

2 divided by 1 = 2 seen	M1
14 cao	A1

Answer: **14**

Question 12

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

Answer: **5:3**

Question 13

264 divided by 11 = 24 seen	M1
144 cao	A1

Answer: **144**

Question 14

4 g cao	B1

Answer: **4 g**

Question 15

20 divided by 4 = 5 seen	M1
5 cao	A1

Answer: **5**

Question 16

deposit found	M1
subtraction	M1
£144.50 cao	A1

Answer: **£144.50**

Question 17

(a) scale factor = 20 / 8 = 2.5 oe	M1
(a) 375g cao	A1

(a) Answer: **375g**

(b) 225g ft from their scale factor in part (a)	A1

(b) Answer: **225g**

Question 18

reduction found	M1
subtracts from the original price	M1
£123.25 cao	A1

Answer: **£123.25**

Question 19

20 cm cao	B1

Answer: **20 cm**

Question 20

392 divided by 14 = 28 seen	M1
multiplies by their share	M1
56 cao	A1

Answer: **56**

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Question 21

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

Answer: **16 m**

Question 22

3 parts = £36 so 1 part = £12 seen	**M1**
£132 cao	**A1**

Answer: **£132**

Question 23

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

Answer: **3**

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