2.6-3 Ratio and Proportion: Practice Set 3: Test Pack

GL ASSESSMENT EP.M50 · Calculators not allowed · about 35 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Simplify the ratio 45 : 60 to its simplest form.

- ☐ A) 3 : 4
- ☐ B) 9 : 12
- ☐ C) 4 : 5
- ☐ D) 2 : 3

2 A tray holds 14 lemon flapjacks and 21 ginger flapjacks. Write the ratio of lemon flapjacks to ginger flapjacks in its simplest form.

(1)

3 Complete the missing number: 5 : 8 = 35 : ___

(1)

4 Which of these ratios is NOT equivalent to 4 : 7?

- ☐ A) 8 : 14
- ☐ B) 12 : 21
- ☐ C) 16 : 27
- ☐ D) 20 : 35

5 7 identical notepads cost £16.10 in total. Calculate the cost of 3 of these notepads.

(2)

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6 Zainab's map has a scale of 1:1,000. Two villages are 12 cm apart on the map. What is the real distance between them in metres?

- [ ] A) 121 m
- [ ] B) 120 m
- [ ] C) 1,200 m
- [ ] D) 12,000 m
- [ ] E) 119 m

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7 Chloe's map has a scale of 1:50,000. Two villages are 2 cm apart on the map. What is the real distance between them in metres?

- [ ] A) 10,000 m
- [ ] B) 100,000 m
- [ ] C) 1,001 m
- [ ] D) 1,000 m
- [ ] E) 100 m

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8 Megan's map has a scale of 1:25,000. Two villages are 3 cm apart on the map. What is the real distance between them in metres?

- [ ] A) 25,003 m
- [ ] B) 751 m
- [ ] C) 7,500 m
- [ ] D) 75,000 m
- [ ] E) 750 m

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9 Leo's map has a scale of 1:100,000. A path is 15 km long in real life. How long is the path on the map, in cm?

- [ ] A) 15 cm
- [ ] B) 150 cm
- [ ] C) 14 cm
- [ ] D) 1.5 cm
- [ ] E) 150,000,000,000 cm

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10 Poppy's map has a scale of 1:100,000. Two villages are 4.5 cm apart on the map. What is the real distance between them in kilometres?

- [ ] A) 450,000 km
- [ ] B) 100,004.5 km
- [ ] C) 5.5 km
- [ ] D) 4.5 km
- [ ] E) 45 km

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11 y is directly proportional to x. When x = 6, y = 15. Calculate the value of y when x = 20.

(2)

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12 Lily's map has a scale of 1:25,000. A path is 5 km long in real life. How long is the path on the map, in cm?

- [ ] A) 200 cm
- [ ] B) 21 cm
- [ ] C) 20 cm
- [ ] D) 2 cm
- [ ] E) 125,000 cm

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13 Mei's map has a scale of 1:20,000. A path is 4 km long in real life. How long is the path on the map, in cm?

- [ ] A) 19 cm
- [ ] B) 2 cm
- [ ] C) 20 cm
- [ ] D) 8,000,000,000 cm
- [ ] E) 200 cm

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14 Ben's map has a scale of 1:5,000. Two villages are 5 cm apart on the map. What is the real distance between them in metres?

- [ ] A) 251 m
- [ ] B) 249 m
- [ ] C) 250 m
- [ ] D) 25,000 m
- [ ] E) 2,500 m

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15 Megan's map has a scale of 1:10,000. Two villages are 6.5 cm apart on the map. What is the real distance between them in metres?

- [ ] A) 10,006.5 m
- [ ] B) 65 m
- [ ] C) 65,000 m
- [ ] D) 6,500 m
- [ ] E) 650 m

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16 Leo's map has a scale of 1:100,000. A path is 10 km long in real life. How long is the path on the map, in cm?

- [ ] A) 1,000,000 cm
- [ ] B) 10 cm
- [ ] C) 11 cm
- [ ] D) 100 cm
- [ ] E) 1 cm

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17 Esme's map has a scale of 1:100,000. Two villages are 6 cm apart on the map. What is the real distance between them in metres?

- [ ] A) 100,006 m
- [ ] B) 600,000 m
- [ ] C) 60,000 m
- [ ] D) 6,000 m
- [ ] E) 600 m

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18 Niamh's map has a scale of 1:50,000. Two villages are 6 cm apart on the map. What is the real distance between them in kilometres?

- [ ] A) 300,000 km
- [ ] B) 30 km
- [ ] C) 4 km
- [ ] D) 3 km
- [ ] E) 0.3 km

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19 Maya's map has a scale of 1:50,000. A path is 1 km long in real life. How long is the path on the map, in cm?

- [ ] A) 0.2 cm
- [ ] B) 5,000,000,000 cm
- [ ] C) 2 cm
- [ ] D) 20 cm
- [ ] E) 3 cm

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20 Chloe's map has a scale of 1:50,000. A path is 5 km long in real life. How long is the path on the map, in cm?

- [ ] A) 100 cm
- [ ] B) 10 cm
- [ ] C) 25,000,000,000 cm
- [ ] D) 11 cm
- [ ] E) 1 cm

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21 Mei's map has a scale of 1:1,000. Two villages are 5 cm apart on the map. What is the real distance between them in metres?

- [ ] A) 50 m
- [ ] B) 500 m
- [ ] C) 51 m
- [ ] D) 5,000 m
- [ ] E) 5 m

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22 Kwame's map has a scale of 1:50,000. Two villages are 2.5 cm apart on the map. What is the real distance between them in kilometres?

- [ ] A) 0.125 km
- [ ] B) 1.25 km
- [ ] C) 0.25 km
- [ ] D) 125,000 km
- [ ] E) 12.5 km

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23 Shop E sells a 750 g bag of pasta for £1.35. Shop F sells a 1.2 kg bag of the same pasta for £2.04. Work out which shop offers better value for money, showing your working.

(3)

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24 A sum of money is divided between Grace and Tobias in the ratio 7 : 4. Grace receives £54 more than Tobias. Calculate the total sum of money divided between them.

(4)

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25 A festival has 600 tickets allocated to three ticket types, early bird, standard and VIP, in the ratio 8 : 5 : 2. Before the festival, 40 VIP tickets are reallocated equally between early bird and standard, while the total number of tickets stays at 600. Calculate the new ratio of early bird to standard to VIP tickets, giving your answer in its simplest form.

(4)

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Mark scheme · 2.6-3 Ratio and Proportion: Practice Set 3: Test Pack

Question 1

A (3 : 4) cao **B1**

Answer: A) 3 : 4

Question 2

2 : 3 oe cao **B1**

Answer: 2 : 3

Question 3

56 cao **B1**

Answer: 56

Question 4

C (16:27) cao **B1**

Answer: C) 16 : 27

Question 5

unit cost found: 16.10/7 = 2.30 **M1**

£6.90 cao **A1**

Answer: £6.90

Question 6

correct option B (120 m) cao **B1**

Answer: B) 120 m

Question 7

correct option D (1,000 m) cao **B1**

Answer: D) 1,000 m

Question 8

correct option E (750 m) cao **B1**

Answer: E) 750 m

Question 9

correct option A (15 cm) cao **B1**

Answer: A) 15 cm

Question 10

correct option D (4.5 km) cao **B1**

Answer: D) 4.5 km

Question 11

constant of proportionality found: k = 15/6 = 2.5, or equivalent scale factor method **M1**

50 cao **A1**

Answer: 50

Question 12

correct option C (20 cm) cao **B1**

Answer: C) 20 cm

Question 13

correct option C (20 cm) cao **B1**

Answer: C) 20 cm

Question 14

correct option C (250 m) cao **B1**

Answer: C) 250 m

Question 15

correct option E (650 m) cao **B1**

Answer: E) 650 m

Question 16

correct option B (10 cm) cao **B1**

Answer: B) 10 cm

Question 17

correct option D (6,000 m) cao **B1**

Answer: D) 6,000 m

Question 18

correct option D (3 km) cao **B1**

Answer: D) 3 km

Question 19

correct option C (2 cm) cao **B1**

Answer: C) 2 cm

Question 20

correct option B (10 cm) cao **B1**

Answer: B) 10 cm

Question 21

correct option A (50 m) cao **B1**

Answer: A) 50 m

Question 22

correct option B (1.25 km) cao **B1**

Answer: B) 1.25 km

Question 23

price per 100 g at Shop E found: (1.35/750) x 100 = 0.18 **M1**

price per 100 g at Shop F found: (2.04/1200) x 100 = 0.17 **M1**

Shop F offers better value cao (£0.17 per 100 g versus £0.18 per 100 g at Shop E) **A1**

Answer: Shop F (£0.17 per 100 g versus £0.18 per 100 g at Shop E)

Question 24

difference in parts found: 7 - 4 = 3 **M1**

dep: unit value found: 54/3 = 18 **M1**

dep: total parts found (7 + 4 = 11) and their 18 x 11 **M1**

£198 cao **A1**

Answer: £198

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Question 25

original numbers found: total parts 8 + 5 + 2 = 15, unit value 600/15 = 40, so early bird = 320, standard = 200, VIP = 80	**M1**
dep: 40 VIP tickets split equally, so 20 tickets added to early bird and 20 to standard	**M1**
dep: new numbers found (early bird = 340, standard = 220, VIP = 40) and simplified using HCF 20	**M1**
17 : 11 : 2 cao	**A1**

Answer: 17 : 11 : 2

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