2.81 Scaling Recipes and Quantities by Ratio: 30-minute Pack

Total Marks

GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 30 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Yusuf mixes squash using juice and water in the ratio 7:1. Yusuf uses 21 ml of juice. How much water does Yusuf use?

- ☐ A) 15 ml
- ☐ B) 3 ml
- ☐ C) 2 ml
- ☐ D) 21 ml
- ☐ E) 4 ml

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2 Oliver mixes paint using red and white in the ratio 7:6. Oliver uses 63 ml of red. How much white does Oliver use?

- ☐ A) 54 ml
- ☐ B) 53 ml
- ☐ C) 62 ml
- ☐ D) 378 ml
- ☐ E) 117 ml

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3 A recipe for muffin mix serves 5 people and uses 50 g of sugar. Declan wants to make it for 20 people. How much sugar is needed?

- ☐ A) 201 g
- ☐ B) 1,000 g
- ☐ C) 65 g
- ☐ D) 199 g
- ☐ E) 200 g

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4 Ewan mixes compost using soil and sand in the ratio 2:5. Ewan uses 12 kg of soil. How much sand does Ewan use?

- [ ] A) 60 kg
- [ ] B) 30 kg
- [ ] C) 15 kg
- [ ] D) 29 kg
- [ ] E) 42 kg

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5 Amara mixes concrete using cement and sand in the ratio 7:1. Amara uses 14 kg of cement. How much more cement than sand does Amara use?

- [ ] A) 12 kg
- [ ] B) 2 kg
- [ ] C) 14 kg
- [ ] D) 11 kg
- [ ] E) 8 kg

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6 A recipe for muffin mix serves 5 people and uses 100 g of sugar. Ethan wants to make it for 10 people. How much sugar is needed?

- [ ] A) 50 g
- [ ] B) 199 g
- [ ] C) 1,000 g
- [ ] D) 200 g
- [ ] E) 105 g

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7 Callum mixes compost using soil and sand in the ratio 2:9. Callum uses 18 kg of soil. How much compost does Callum make altogether?

- [ ] A) 25 kg
- [ ] B) 99 kg
- [ ] C) 162 kg
- [ ] D) 63 kg
- [ ] E) 9 kg

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8 A recipe for lemonade serves 5 people. It uses 50 g of water and 300 g of sugar. Amara makes it for 15 people. What is the total mass of water and sugar needed?

- [ ] A) 5,250 g
- [ ] B) 450 g
- [ ] C) 1,050 g
- [ ] D) 150 g
- [ ] E) 950 g

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9 Chloe mixes a trail mix using nuts and raisins in the ratio 1:2. Chloe uses 2 g of nuts. How much raisins does Chloe use?

- [ ] A) 5 g
- [ ] B) 6 g
- [ ] C) 2 g
- [ ] D) 3 g
- [ ] E) 4 g

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10 A recipe for rice pudding serves 12 people and uses 240 ml of milk. Rhys wants to make it for 17 people. How much milk is needed?

- [ ] A) 340 ml
- [ ] B) 245 ml
- [ ] C) 20 ml
- [ ] D) 1,200 ml
- [ ] E) 4,080 ml

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11 Leo mixes paint using red and white in the ratio 1:7. Leo uses 4 ml of red. How much white does Leo use?

- [ ] A) 32 ml
- [ ] B) 28 ml
- [ ] C) 4 ml
- [ ] D) 24 ml
- [ ] E) 10 ml

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12 Leo mixes squash using juice and water in the ratio 7:2. Leo uses 63 ml of juice. How much water does Leo use?

- [ ] A) 81 ml
- [ ] B) 45 ml
- [ ] C) 58 ml
- [ ] D) 18 ml
- [ ] E) 126 ml

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13 A recipe for scone mix serves 8 people and uses 40 g of self-raising flour. Harry wants to make it for 26 people. How much self-raising flour is needed?

- [ ] A) 58 g
- [ ] B) 720 g
- [ ] C) 130 g
- [ ] D) 5 g
- [ ] E) 1,040 g

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14 Ben mixes a trail mix using nuts and raisins in the ratio 3:8. Ben uses 30 g of nuts. How much raisins does Ben use?

- [ ] A) 79 g
- [ ] B) 10 g
- [ ] C) 240 g
- [ ] D) 80 g
- [ ] E) 35 g

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15 A recipe for fruit punch serves 10 people and uses 200 ml of orange juice. Aisha wants to make it for 30 people. How much orange juice is needed?

- [ ] A) 220 ml
- [ ] B) 600 ml
- [ ] C) 6,000 ml
- [ ] D) 599 ml
- [ ] E) 20 ml

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16 Ravi mixes compost using soil and sand in the ratio 8:9. Ravi uses 16 kg of soil. How much more sand than soil does Ravi use?

- [ ] A) 2 kg
- [ ] B) 17 kg
- [ ] C) 144 kg
- [ ] D) 3 kg
- [ ] E) 34 kg

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17 A recipe for flapjack mix serves 5 people and uses 200 g of oats. Leo wants to make it for 22 people. How much oats is needed?

- [ ] A) 881 g
- [ ] B) 4,400 g
- [ ] C) 879 g
- [ ] D) 217 g
- [ ] E) 880 g

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18 Callum mixes squash using juice and water in the ratio 1:3. Callum uses 2 ml of juice. How much water does Callum use?

- [ ] A) 8 ml
- [ ] B) 4 ml
- [ ] C) 6 ml
- [ ] D) 2 ml
- [ ] E) 5 ml

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19 Lily mixes squash using juice and water in the ratio 2:7. Lily uses 14 ml of juice. How much more water than juice does Lily use?

- [ ] A) 4 ml
- [ ] B) 35 ml
- [ ] C) 19 ml
- [ ] D) 36 ml
- [ ] E) 98 ml

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20 A recipe for biscuit dough serves 10 people and uses 250 g of butter. Mei wants to make it for 2 people. How much butter is needed?

- [ ] A) 500 g
- [ ] B) 242 g
- [ ] C) 50 g
- [ ] D) -2,000 g
- [ ] E) 51 g

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21 Yusuf mixes concrete using cement and sand in the ratio 7:6. Yusuf uses 35 kg of cement. How much sand does Yusuf use?

- [ ] A) 30 kg
- [ ] B) 5 kg
- [ ] C) 34 kg
- [ ] D) 210 kg
- [ ] E) 29 kg

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22 A recipe for muffin mix serves 4 people. It uses 60 g of sugar and 28 g of sugar. Mei makes it for 25 people. What is the total mass of sugar and sugar needed?

- [ ] A) 235 g
- [ ] B) 403 g
- [ ] C) 551 g
- [ ] D) 375 g
- [ ] E) 550 g

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23 Ewan mixes a smoothie using banana and yogurt in the ratio 5:3. Ewan uses 50 g of banana. How much yogurt does Ewan use?

- [ ] A) 48 g
- [ ] B) 31 g
- [ ] C) 150 g
- [ ] D) 30 g
- [ ] E) 29 g

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24 A recipe for fruit punch serves 2 people and uses 40 ml of orange juice. Ravi wants to make it for 16 people. How much orange juice is needed?

- [ ] A) 320 ml
- [ ] B) 5 ml
- [ ] C) 640 ml
- [ ] D) 321 ml
- [ ] E) 54 ml

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25 Fatima mixes paint using red and white in the ratio 3:7. Fatima uses 30 ml of red. How much paint does Fatima make altogether?

- [ ] A) 34 ml
- [ ] B) 210 ml
- [ ] C) 40 ml
- [ ] D) 10 ml
- [ ] E) 100 ml

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26 A recipe for lemonade serves 2 people. It uses 20 g of water and 12 g of sugar. Rhys makes it for 30 people. What is the total mass of water and sugar needed?

- [ ] A) 200 g
- [ ] B) 481 g
- [ ] C) 480 g
- [ ] D) 300 g
- [ ] E) 312 g

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27 Kofi mixes paint using red and white in the ratio 1:7. Kofi uses 10 ml of red. How much white does Kofi use?

- [ ] A) 71 ml
- [ ] B) 70 ml
- [ ] C) 60 ml
- [ ] D) 10 ml
- [ ] E) 16 ml

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28 A recipe for pasta sauce serves 4 people and uses 80 g of chopped tomatoes. Oliver wants to make it for 29 people. How much chopped tomatoes is needed?

- ☐ A) 105 g
- ☐ B) 579 g
- ☐ C) 580 g
- ☐ D) 581 g
- ☐ E) 2,320 g

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29 Yusuf mixes a smoothie using banana and yogurt in the ratio 5:2. Yusuf uses 25 g of banana. How much yogurt does Yusuf use?

- ☐ A) 5 g
- ☐ B) 10 g
- ☐ C) 22 g
- ☐ D) 9 g
- ☐ E) 50 g

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30 A recipe for lemonade serves 2 people and uses 20 ml of water. Megan wants to make it for 21 people. How much water is needed?

- ☐ A) 10 ml
- ☐ B) 380 ml
- ☐ C) 39 ml
- ☐ D) 420 ml
- ☐ E) 210 ml

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31 A smoothie recipe is doubled to make 8 portions and the doubled recipe uses 600 ml orange juice.

(a) What was the original number of portions? **(1)**

(b) How much orange juice was in each portion of the original recipe? **(1)**

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Mark scheme · 2.81 Scaling Recipes and Quantities by Ratio: 30-minute Pack

Question 1

correct option B (3 ml) cao; 21 / 7 = 3 per part **B1**

Answer: B) 3 ml

Question 2

correct option A (54 ml) cao; 63 / 7 = 9 per part **B1**

Answer: A) 54 ml

Question 3

correct option E (200 g) cao; scale factor 20/5 applied to the amount **B1**

Answer: E) 200 g

Question 4

correct option B (30 kg) cao; 12 / 2 = 6 per part **B1**

Answer: B) 30 kg

Question 5

correct option A (12 kg) cao; 14 / 7 = 2 per part **B1**

Answer: A) 12 kg

Question 6

correct option D (200 g) cao; scale factor 10/5 applied to the amount **B1**

Answer: D) 200 g

Question 7

correct option B (99 kg) cao; 18 / 2 = 9 per part **B1**

Answer: B) 99 kg

Question 8

correct option C (1,050 g) cao; scale factor 15/5 applied to the amount **B1**

Answer: C) 1,050 g

Question 9

correct option E (4 g) cao; 2 / 1 = 2 per part **B1**

Answer: E) 4 g

Question 10

correct option A (340 ml) cao; scale factor 17/12 applied to the amount **B1**

Answer: A) 340 ml

Question 11

correct option B (28 ml) cao; 4 / 1 = 4 per part **B1**

Answer: B) 28 ml

Question 12

correct option D (18 ml) cao; 63 / 7 = 9 per part **B1**

Answer: D) 18 ml

Question 13

correct option C (130 g) cao; scale factor 26/8 applied to the amount **B1**

Answer: C) 130 g

Question 14

correct option D (80 g) cao; 30 / 3 = 10 per part **B1**

Answer: D) 80 g

Question 15

correct option B (600 ml) cao; scale factor 30/10 applied to the amount **B1**

Answer: B) 600 ml

Question 16

correct option A (2 kg) cao; 16 / 8 = 2 per part **B1**

Answer: A) 2 kg

Question 17

correct option E (880 g) cao; scale factor 22/5 applied to the amount **B1**

Answer: E) 880 g

Question 18

correct option C (6 ml) cao; 2 / 1 = 2 per part **B1**

Answer: C) 6 ml

Question 19

correct option B (35 ml) cao; 14 / 2 = 7 per part **B1**

Answer: B) 35 ml

Question 20

correct option C (50 g) cao; scale factor 2/10 applied to the amount **B1**

Answer: C) 50 g

Question 21

correct option A (30 kg) cao; 35 / 7 = 5 per part **B1**

Answer: A) 30 kg

Question 22

correct option E (550 g) cao; scale factor 25/4 applied to the amount **B1**

Answer: E) 550 g

Question 23

correct option D (30 g) cao; 50 / 5 = 10 per part **B1**

Answer: D) 30 g

Question 24

correct option A (320 ml) cao; scale factor 16/2 applied to the amount **B1**

Answer: A) 320 ml

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Question 25

correct option E (100 ml) cao; 30 / 3 = 10 per part **B1**

Answer: E) 100 ml

Question 26

correct option C (480 g) cao; scale factor 30/2 applied to the amount **B1**

Answer: C) 480 g

Question 27

correct option B (70 ml) cao; 10 / 1 = 10 per part **B1**

Answer: B) 70 ml

Question 28

correct option C (580 g) cao; scale factor 29/4 applied to the amount **B1**

Answer: C) 580 g

Question 29

correct option B (10 g) cao; 25 / 5 = 5 per part **B1**

Answer: B) 10 g

Question 30

correct option E (210 ml) cao; scale factor 21/2 applied to the amount **B1**

Answer: E) 210 ml

Question 31

(a) 4 portions cao **B1**

(a) Answer: 4 portions

(b) 75 ml cao **A1**

(b) Answer: 75 ml

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