2.36 Ratio and Proportion Depth: Test Pack

GL ASSESSMENT EP.M40 · Calculators not allowed · about 35 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Simplify the ratio 42 : 56 to its simplest form.

(1)

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2 Which of these is the simplified form of the ratio 28 : 35?

- ☐ A) 4 : 5
- ☐ B) 7 : 8
- ☐ C) 4 : 7
- ☐ D) 2 : 3

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3 A bakery tray holds 14 blueberry muffins and 21 chocolate muffins. Write the ratio of blueberry muffins to chocolate muffins in its simplest form.

(1)

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4 Complete the missing number: 7 : 9 = ___ : 63

(1)

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5 On a school trip, the ratio of teachers to pupils must be at least 1 : 8. If 6 teachers go on the trip, what is the maximum number of pupils allowed?

- ☐ A) 14
- ☐ B) 42
- ☐ C) 48
- ☐ D) 56

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6 Jack, Chloe and Niamh share 18 sweets in the ratio 1:6:2. How many does Chloe get?

- ☐ A) 6
- ☐ B) 13
- ☐ C) 4
- ☐ D) 12
- ☐ E) 2

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7 Esme, Harry and Sienna share 32 marbles in the ratio 4:7:5. How many does Harry get?

- ☐ A) 10
- ☐ B) 14
- ☐ C) 13
- ☐ D) 8
- ☐ E) 18

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8 Niamh, Aisha and Amara share 44 raffle tickets in the ratio 3:2:6. How many does Aisha get?

- ☐ A) 12
- ☐ B) 36
- ☐ C) 24
- ☐ D) 9
- ☐ E) 8

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9 Dylan, Tariq and Esme share 120 stamps in the ratio 1:5:6. How many does Tariq get?

- ☐ A) 70
- ☐ B) 10
- ☐ C) 50
- ☐ D) 40
- ☐ E) 60

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10 Harry, Poppy and Ethan share 135 raffle tickets in the ratio 3:7:5. How many does Poppy get?

- ☐ A) 72
- ☐ B) 27
- ☐ C) 64
- ☐ D) 45
- ☐ E) 63

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11 Priya, Harry and Oliver share 60 conkers in the ratio 5:1:6. How many more does the person with the largest share get than the person with the smallest?

- [ ] A) 26
- [ ] B) 30
- [ ] C) 25
- [ ] D) 5
- [ ] E) 35

---

12 Sana, Zainab and Oliver share 70 football cards in the ratio 3:5:2. How many more does the person with the largest share get than the person with the smallest?

- [ ] A) 14
- [ ] B) 3
- [ ] C) 21
- [ ] D) 35
- [ ] E) 22

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13 Leo, Oliver and Niamh share 70 football cards in the ratio 4:7:3. How many does Oliver get?

- [ ] A) 15
- [ ] B) 20
- [ ] C) 5
- [ ] D) 34
- [ ] E) 35

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14 Ben, Esme and Noah share 99 stamps in the ratio 4:5:2. How many more does the person with the largest share get than the person with the smallest?

- [ ] A) 28
- [ ] B) 18
- [ ] C) 27
- [ ] D) 3
- [ ] E) 45

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15 Noah, Sana and Zainab share 143 marbles in the ratio 7:4:2. How many more does the person with the largest share get than the person with the smallest?

- [ ] A) 99
- [ ] B) 5
- [ ] C) 77
- [ ] D) 66
- [ ] E) 55

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16 Zainab, Rhys and Priya share 120 conkers in the ratio 7:1:2. How many more does the person with the largest share get than the person with the smallest?

- [ ] A) 84
- [ ] B) 72
- [ ] C) 12
- [ ] D) 6
- [ ] E) 71

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17 Ravi, Sienna and Tariq share 30 raffle tickets in the ratio 4:1:5. How many more does the person with the largest share get than the person with the smallest?

- [ ] A) 3
- [ ] B) 15
- [ ] C) 12
- [ ] D) 13
- [ ] E) 4

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18 Aisha, Kwame and Leo share 55 badges in the ratio 2:5:4. How many more does the person with the largest share get than the person with the smallest?

- [ ] A) 3
- [ ] B) 16
- [ ] C) 30
- [ ] D) 25
- [ ] E) 15

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19 Rhys, Aisha and Ben share 60 stamps in the ratio 6:5:1. How many does Aisha get?

- [ ] A) 20
- [ ] B) 5
- [ ] C) 25
- [ ] D) 26
- [ ] E) 30

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20 Tom, Rhys and Sienna share 27 sweets in the ratio 1:3:5. How many more does the person with the largest share get than the person with the smallest?

- [ ] A) 15
- [ ] B) 13
- [ ] C) 4
- [ ] D) 12
- [ ] E) 18

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21 Declan, Chloe and Jack share 84 stickers in the ratio 1:6:7. How many does Chloe get?

- [ ] A) 28
- [ ] B) 36
- [ ] C) 35
- [ ] D) 42
- [ ] E) 6

---

22 Oliver, Harry and Declan share 156 shells in the ratio 2:5:6. How many does Harry get?

- [ ] A) 72
- [ ] B) 24
- [ ] C) 12
- [ ] D) 60
- [ ] E) 59

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23 Ewan, Aisha and Poppy share 120 marbles in the ratio 3:2:5. How many does Aisha get?

- [ ] A) 40
- [ ] B) 25
- [ ] C) 60
- [ ] D) 24
- [ ] E) 36

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24 Zainab, Rhys and Declan share 108 conkers in the ratio 7:2:3. How many more does the person with the largest share get than the person with the smallest?

- [ ] A) 45
- [ ] B) 46
- [ ] C) 63
- [ ] D) 5
- [ ] E) 44

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25 The ratio of red counters to green counters in a jar is 3 : 5. There are 40 counters in the jar altogether. How many green counters are there?

- [ ] A) 15
- [ ] B) 20
- [ ] C) 24
- [ ] D) 25

---

26 Amara, Ffion and Niamh share 32 sweets in the ratio 7:3:6. How many more does the person with the largest share get than the person with the smallest?

- [ ] A) 4
- [ ] B) 14
- [ ] C) 8
- [ ] D) 18
- [ ] E) 6

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27 Cereal A costs £2.40 for a 750 g box. Cereal B costs £1.75 for a 500 g box. Work out which cereal offers better value for money, showing your working.

(3)

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28 It takes 6 machines, working at the same constant rate, 10 hours to complete an order. Calculate how long it would take 4 machines, working at the same rate, to complete an identical order.

(3)

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29 In a factory, the ratio of day-shift workers to night-shift workers is 7 : 3. The ratio of night-shift workers to weekend-only workers is 2 : 5. Calculate the ratio of day-shift to night-shift to weekend-only workers, giving your answer in its simplest form.

(3)

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Mark scheme · 2.36 Ratio and Proportion Depth: Test Pack

Question 1

3 : 4 oe cao **B1**

Answer: 3 : 4

Question 2

A (4:5) cao **B1**

Answer: A) 4 : 5

Question 3

2 : 3 oe cao **B1**

Answer: 2 : 3

Question 4

49 cao **B1**

Answer: 49

Question 5

C (48) cao **B1**

Answer: C) 48

Question 6

correct option D (12) cao; 18 / 9 = 2 per part **B1**

Answer: D) 12

Question 7

correct option B (14) cao; 32 / 16 = 2 per part **B1**

Answer: B) 14

Question 8

correct option E (8) cao; 44 / 11 = 4 per part **B1**

Answer: E) 8

Question 9

correct option C (50) cao; 120 / 12 = 10 per part **B1**

Answer: C) 50

Question 10

correct option E (63) cao; 135 / 15 = 9 per part **B1**

Answer: E) 63

Question 11

correct option C (25) cao; 60 / 12 = 5 per part **B1**

Answer: C) 25

Question 12

correct option C (21) cao; 70 / 10 = 7 per part **B1**

Answer: C) 21

Question 13

correct option E (35) cao; 70 / 14 = 5 per part **B1**

Answer: E) 35

Question 14

correct option C (27) cao; 99 / 11 = 9 per part **B1**

Answer: C) 27

Question 15

correct option E (55) cao; 143 / 13 = 11 per part **B1**

Answer: E) 55

Question 16

correct option B (72) cao; 120 / 10 = 12 per part **B1**

Answer: B) 72

Question 17

correct option C (12) cao; 30 / 10 = 3 per part **B1**

Answer: C) 12

Question 18

correct option E (15) cao; 55 / 11 = 5 per part **B1**

Answer: E) 15

Question 19

correct option C (25) cao; 60 / 12 = 5 per part **B1**

Answer: C) 25

Question 20

correct option D (12) cao; 27 / 9 = 3 per part **B1**

Answer: D) 12

Question 21

correct option B (36) cao; 84 / 14 = 6 per part **B1**

Answer: B) 36

Question 22

correct option D (60) cao; 156 / 13 = 12 per part **B1**

Answer: D) 60

Question 23

correct option D (24) cao; 120 / 10 = 12 per part **B1**

Answer: D) 24

Question 24

correct option A (45) cao; 108 / 12 = 9 per part **B1**

Answer: A) 45

Question 25

D (25) cao **B1**

Answer: D) 25

Question 26

correct option C (8) cao; 32 / 16 = 2 per part **B1**

Answer: C) 8

Question 27

price per 100 g for Cereal A found: 2.40/7.5 = 0.32 (32p) **M1**

price per 100 g for Cereal B found: 1.75/5 = 0.35 (35p) **M1**

Cereal A offers better value (cao, since 32p per 100 g is less than 35p per 100 g) **A1**

Answer: Cereal A (32p per 100 g versus 35p per 100 g for Cereal B)

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Question 28

total machine-hours found: 6 x 10 = 60	**M1**
dep: their 60/4	**M1**
15 hours cao	**A1**

Answer: 15 hours

Question 29

finds a common value for night-shift workers in both ratios (e.g. scales 7:3 to 14:6 and 2:5 to 6:15, using the LCM of 3 and 2, which is 6)	**M1**
dep: combines to give 14 : 6 : 15	**M1**
14 : 6 : 15 cao (already in simplest form, HCF = 1)	**A1**

Answer: 14 : 6 : 15

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