2.83 Combined Ratio and Fraction Problems: Test Pack

GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 25 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A and B share a bag of sweets in the ratio 2:3. What fraction of the sweets does A receive?

- ☐ A) 2/3
- ☐ B) 2/5
- ☐ C) 3/5
- ☐ D) 1/3
- ☐ E) 1/5

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2 There are 20 students in a club. The ratio of boys to girls is 4:1. How many girls are there?

- ☐ A) 4
- ☐ B) 5
- ☐ C) 8
- ☐ D) 16
- ☐ E) 12

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3 Amy has 3/7 of a cake and Ben has the rest. What is the ratio Amy:Ben?

- ☐ A) 3:4
- ☐ B) 3:7
- ☐ C) 4:3
- ☐ D) 3:10
- ☐ E) 7:3

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4 A and B share money in the ratio 4:7. After A receives an extra £24, the ratio becomes 5:8. How much did A have originally?

(2)

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5 The ratio of boys to girls is 5:7. What fraction of the group are girls?

- ☐ A) 7/12
- ☐ B) 1/6
- ☐ C) 5/7
- ☐ D) 1/7
- ☐ E) 5/12

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6 In a group of 26, the ratio of cats to dogs is 7:6. How many more cats are there than dogs?

- ☐ A) 1
- ☐ B) 2
- ☐ C) 12
- ☐ D) 26
- ☐ E) 24

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7 Three drinks A, B and C are mixed in the ratio 3:4:5. The total mixture is 480 ml. How much of drink B is used?

(2)

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8 A pile of cards is split into three piles in the ratio 4:6:9. The middle pile has 30 more cards than the smallest pile. How many cards were there in the pile originally?

(3)

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9 The ratio of cats to dogs is 1:8. What fraction of the group are dogs?

- ☐ A) 1/9
- ☐ B) 7/9
- ☐ C) 1/8
- ☐ D) 4/5
- ☐ E) 8/9

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10 In a group of 21, the ratio of boys to girls is 1:6. How many more girls are there than boys?

- [ ] A) 15
- [ ] B) 6
- [ ] C) 18
- [ ] D) 3
- [ ] E) 5

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11 The ratio of boys to girls is 7:5. What fraction of the group are girls?

- [ ] A) 1/6
- [ ] B) 7/5
- [ ] C) 5/12
- [ ] D) 7/12
- [ ] E) 5/19

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12 The ratio of red counters to blue counters is 2:3. What fraction of the group are blue counters?

- [ ] A) 2/3
- [ ] B) 3/5
- [ ] C) 2/5
- [ ] D) 1/5
- [ ] E) 1/3

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13 The ratio of boys to girls is 7:2. What fraction of the group are girls?

- [ ] A) 7/2
- [ ] B) 1/8
- [ ] C) 1/2
- [ ] D) 2/9
- [ ] E) 7/9

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14 The ratio of red counters to blue counters is 3:7. What fraction of the group are blue counters?

- [ ] A) 7/13
- [ ] B) 1/7
- [ ] C) 3/7
- [ ] D) 3/10
- [ ] E) 7/10

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15 In a group of 64, the ratio of boys to girls is 3:5. How many more girls are there than boys?

- [ ] A) 40
- [ ] B) 16
- [ ] C) 17
- [ ] D) 15
- [ ] E) 2

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16 In a group of 30, the ratio of red counters to blue counters is 8:7. How many more red counters are there than blue counters?

- [ ] A) 1
- [ ] B) 30
- [ ] C) 14
- [ ] D) 28
- [ ] E) 2

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17 In a group of 30, the ratio of adults to children is 3:7. How many more children are there than adults?

- [ ] A) 4
- [ ] B) 21
- [ ] C) 11
- [ ] D) 12
- [ ] E) 9

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18 The ratio of boys to girls is 2:5. What fraction of the group are girls?

- [ ] A) 5/7
- [ ] B) 1/5
- [ ] C) 2/7
- [ ] D) 2/5
- [ ] E) 5/9

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19 In a group of 117, the ratio of boys to girls is 5:8. How many more girls are there than boys?

- [ ] A) 39
- [ ] B) 3
- [ ] C) 27
- [ ] D) 26
- [ ] E) 72

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20 In a group of 130, the ratio of cherry sweets to lemon sweets is 3:7. How many more lemon sweets are there than cherry sweets?

- [ ] A) 53
- [ ] B) 52
- [ ] C) 91
- [ ] D) 4
- [ ] E) 78

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21 In a group of 55, the ratio of boys to girls is 3:8. How many more girls are there than boys?

- [ ] A) 5
- [ ] B) 11
- [ ] C) 25
- [ ] D) 24
- [ ] E) 40

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22 In a group of 84, the ratio of adults to children is 1:5. How many more children are there than adults?

- [ ] A) 70
- [ ] B) 57
- [ ] C) 4
- [ ] D) 56
- [ ] E) 28

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Mark scheme · 2.83 Combined Ratio and Fraction Problems: Test Pack

Question 1

correct option B (2/5) cao **B1**

Answer: B) 2/5 (A receives 2 out of 5 equal parts of the sweets.) The total ratio parts = 2+3 = 5 so A has 2/5 of the sweets. (Distractors: A) swapped parts; C) B's fraction; D) 1/3 arises from confusion with thirds; E) 1/5 is a place-value slip.)

Question 2

correct option A (4) cao **B1**

Answer: A) 4 (Total parts 4+1 = 5, each part = 20/5 = 4, girls = 1 part = 4.)

Question 3

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

Answer: A) 3:4 (Amy has 3/7 so Ben has 4/7; ratio Amy:Ben = 3:4.)

Question 4

form equation (4k + 24)/(7k) = 5/8 or equivalent method; accept an equivalent route to the same value without algebra, such as reasoning in ratio units **M1**

£256 cao **A1**

Answer: £256 (Let A = 4k, B = 7k. (4k + 24)/(7k) = 5/8 gives 32k + 192 = 35k so k = 64, A = 4k = 256.)

Question 5

correct option A (7/12) cao **B1**

Answer: A) 7/12

Question 6

correct option B (2) cao **B1**

Answer: B) 2

Question 7

find one part = 480/12 or equivalent **M1**

160 ml cao **A1**

Answer: 160 ml (Total parts 3+4+5 = 12, one part = 480/12 = 40, B = 4 x 40 = 160 ml.)

Question 8

let one unit = x so 6x - 4x = 30 and form equation 2x = 30 **M1**

solve x = 15 and compute total units 4+6+9 = 19 **M1**

285 cao **A1**

Answer: 285 cards (If one unit = x then middle minus smallest = 6x - 4x = 2x = 30 so x = 15. Total = 19x = 19 x 15 = 285.)

Question 9

correct option E (8/9) cao **B1**

Answer: E) 8/9

Question 10

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

Answer: A) 15

Question 11

correct option C (5/12) cao **B1**

Answer: C) 5/12

Question 12

correct option B (3/5) cao **B1**

Answer: B) 3/5

Question 13

correct option D (2/9) cao **B1**

Answer: D) 2/9

Question 14

correct option E (7/10) cao **B1**

Answer: E) 7/10

Question 15

correct option B (16) cao **B1**

Answer: B) 16

Question 16

correct option E (2) cao **B1**

Answer: E) 2

Question 17

correct option D (12) cao **B1**

Answer: D) 12

Question 18

correct option A (5/7) cao **B1**

Answer: A) 5/7

Question 19

correct option C (27) cao **B1**

Answer: C) 27

Question 20

correct option B (52) cao **B1**

Answer: B) 52

Question 21

correct option C (25) cao **B1**

Answer: C) 25

Question 22

correct option D (56) cao **B1**

Answer: D) 56

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