2.82 Direct Proportion and Value for Money: 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 How many 250 g packets are needed to make 3 kg?

- ☐ A) 10
- ☐ B) 11
- ☐ C) 12
- ☐ D) 13
- ☐ E) 14

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2 8 cakes cost £12.00. How much do 16 cakes cost?

- ☐ A) £192.00
- ☐ B) £23.00
- ☐ C) £24.00
- ☐ D) £1.50
- ☐ E) £25.00

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3 Declan compares packs of orange juice: pack A is 100 ml for £0.56; pack B is 125 ml for £0.68; pack C is 500 ml for £3.75; pack D is 750 ml for £3.52; pack E is 1500 ml for £9.60. Which pack is the best value for money?

- ☐ A) Pack E
- ☐ B) Pack A
- ☐ C) Pack B
- ☐ D) Pack D
- ☐ E) Pack C

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4 10 pens cost £3.00. How much do 12 pens cost?

- [ ] A) £3.60
- [ ] B) £0.60
- [ ] C) £0.30
- [ ] D) £36.00
- [ ] E) £4.60

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5 12 cakes cost £1.20. How much do 8 cakes cost?

- [ ] A) £9.60
- [ ] B) £0.10
- [ ] C) £0.80
- [ ] D) £-0.40
- [ ] E) £0.15

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6 Ethan compares packs of orange juice: pack A is 100 ml for £0.57; pack B is 400 ml for £2.84; pack C is 600 ml for £2.58; pack D is 1200 ml for £6.00; pack E is 1500 ml for £6.75. Which pack is the best value for money?

- [ ] A) Pack E
- [ ] B) Pack D
- [ ] C) Pack A
- [ ] D) Pack B
- [ ] E) Pack C

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7 4 muffins cost £1.00. How much do 10 muffins cost?

- [ ] A) £0.25
- [ ] B) £2.50
- [ ] C) £10.00
- [ ] D) £6.00
- [ ] E) £0.10

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8 5 postcards cost £4.25. How much do 20 postcards cost?

- [ ] A) £16.00
- [ ] B) £17.00
- [ ] C) £63.75
- [ ] D) £0.85
- [ ] E) £85.00

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9 Zainab compares packs of shampoo: pack A is 125 ml for £0.65; pack B is 250 ml for £1.38; pack C is 300 ml for £2.37; pack D is 600 ml for £1.86; pack E is 750 ml for £6.52. Which pack is the best value for money?

- [ ] A) Pack C
- [ ] B) Pack A
- [ ] C) Pack D
- [ ] D) Pack E
- [ ] E) Pack B

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10 A supermarket sells 6 muffins for £3.00. What is the cost of one muffin?

- [ ] A) 40p
- [ ] B) 50p
- [ ] C) 60p
- [ ] D) 55p
- [ ] E) 45p

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11 Dylan compares packs of orange juice: pack A is 125 ml for £1.05; pack B is 200 ml for £1.52; pack C is 300 ml for £2.31; pack D is 750 ml for £2.48; pack E is 1000 ml for £5.30. Which pack is the best value for money?

- [ ] A) Pack A
- [ ] B) Pack E
- [ ] C) Pack C
- [ ] D) Pack B
- [ ] E) Pack D

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12 6 notebooks cost £0.48. How much do 17 notebooks cost?

- [ ] A) £8.16
- [ ] B) £0.36
- [ ] C) £0.08
- [ ] D) £2.36
- [ ] E) £1.36

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13 Priya compares packs of crisps: pack A is 150 g for £0.88; pack B is 250 g for £1.28; pack C is 600 g for £3.18; pack D is 750 g for £3.90; pack E is 1200 g for £6.48. Which pack is the best value for money?

- [ ] A) Pack A
- [ ] B) Pack E
- [ ] C) Pack B
- [ ] D) Pack C
- [ ] E) Pack D

---

14 4 bus tickets cost £0.60. How much do 8 bus tickets cost?

- [ ] A) £0.15
- [ ] B) £0.20
- [ ] C) £0.60
- [ ] D) £1.20
- [ ] E) £4.80

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15 Isla compares packs of shampoo: pack A is 100 ml for £0.49; pack B is 125 ml for £0.94; pack C is 400 ml for £2.24; pack D is 600 ml for £4.80; pack E is 750 ml for £5.25. Which pack is the best value for money?

- [ ] A) Pack A
- [ ] B) Pack E
- [ ] C) Pack D
- [ ] D) Pack C
- [ ] E) Pack B

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16 8 bananas cost £6.80. How much do 23 bananas cost?

- [ ] A) £156.40
- [ ] B) £19.55
- [ ] C) £102.00
- [ ] D) £0.85
- [ ] E) £20.55

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17 Arjun compares packs of washing liquid: pack A is 125 ml for £0.74; pack B is 200 ml for £1.22; pack C is 500 ml for £2.65; pack D is 750 ml for £4.35; pack E is 1000 ml for £6.40. Which pack is the best value for money?

- [ ] A) Pack E
- [ ] B) Pack B
- [ ] C) Pack A
- [ ] D) Pack C
- [ ] E) Pack D

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18 Tom compares packs of crisps: pack A is 200 g for £1.30; pack B is 600 g for £4.50; pack C is 750 g for £6.22; pack D is 1000 g for £7.70; pack E is 1200 g for £4.80. Which pack is the best value for money?

- [ ] A) Pack B
- [ ] B) Pack C
- [ ] C) Pack E
- [ ] D) Pack A
- [ ] E) Pack D

---

19 12 notebooks cost £18.00. How much do 16 notebooks cost?

- [ ] A) £1.50
- [ ] B) £24.00
- [ ] C) £23.00
- [ ] D) £288.00
- [ ] E) £72.00

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20 Noah compares packs of crisps: pack A is 125 g for £0.86; pack B is 150 g for £1.02; pack C is 500 g for £2.55; pack D is 750 g for £4.72; pack E is 1500 g for £9.00. Which pack is the best value for money?

- [ ] A) Pack E
- [ ] B) Pack D
- [ ] C) Pack B
- [ ] D) Pack A
- [ ] E) Pack C

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21 Esme compares packs of orange juice: pack A is 100 ml for £0.42; pack B is 150 ml for £0.78; pack C is 300 ml for £1.20; pack D is 400 ml for £2.76; pack E is 800 ml for £5.20. Which pack is the best value for money?

- [ ] A) Pack A
- [ ] B) Pack B
- [ ] C) Pack E
- [ ] D) Pack C
- [ ] E) Pack D

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22 5 muffins cost £11.25. How much do 16 muffins cost?

- [ ] A) £123.75
- [ ] B) £180.00
- [ ] C) £36.00
- [ ] D) £37.00
- [ ] E) £2.25

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23 Harry compares packs of cereal: pack A is 125 g for £0.50; pack B is 300 g for £1.65; pack C is 1000 g for £4.30; pack D is 1200 g for £8.88; pack E is 1500 g for £11.25. Which pack is the best value for money?

- [ ] A) Pack A
- [ ] B) Pack D
- [ ] C) Pack B
- [ ] D) Pack E
- [ ] E) Pack C

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24 Poppy compares packs of cereal: pack A is 250 g for £1.72; pack B is 400 g for £2.40; pack C is 600 g for £4.50; pack D is 750 g for £5.48; pack E is 1200 g for £5.64. Which pack is the best value for money?

- ☐ A) Pack E
- ☐ B) Pack D
- ☐ C) Pack A
- ☐ D) Pack B
- ☐ E) Pack C

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25 4 football stickers cost £0.32. How much do 16 football stickers cost?

- ☐ A) £3.84
- ☐ B) £5.12
- ☐ C) £1.28
- ☐ D) £0.28
- ☐ E) £0.08

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26 Jack compares packs of shampoo: pack A is 125 ml for £1.02; pack B is 400 ml for £2.12; pack C is 800 ml for £4.88; pack D is 1000 ml for £5.40; pack E is 1200 ml for £3.84. Which pack is the best value for money?

- ☐ A) Pack A
- ☐ B) Pack D
- ☐ C) Pack B
- ☐ D) Pack E
- ☐ E) Pack C

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27 8 balloons cost £4.40. How much do 14 balloons cost?

- ☐ A) £6.70
- ☐ B) £7.70
- ☐ C) £3.30
- ☐ D) £61.60
- ☐ E) £0.55

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28 Aisha compares packs of orange juice: pack A is 250 ml for £1.28; pack B is 500 ml for £3.40; pack C is 600 ml for £4.14; pack D is 1200 ml for £6.84; pack E is 1500 ml for £6.60. Which pack is the best value for money?

- ☐ A) Pack C
- ☐ B) Pack B
- ☐ C) Pack A
- ☐ D) Pack D
- ☐ E) Pack E

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29 A 1 L bottle of water costs £1.20. A smaller 500 ml bottle costs 70p. Which bottle gives the cheaper price per litre?

- ☐ A) Cannot tell
- ☐ B) The 1 L bottle
- ☐ C) Cheaper per 250 ml
- ☐ D) The 500 ml bottle
- ☐ E) They are the same

---

30 A pen costs £1.25 each. A pack of 5 pens costs £5.60. The shop offers a loyalty voucher giving 10% off packs only. Using the voucher, what is the price per pen if you buy the 5-pack? Which is cheaper, a single pen or a pen from the discounted pack?

(3)

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Mark scheme · 2.82 Direct Proportion and Value for Money: 30-minute Pack

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

Question 1

correct option C (12 packets) cao **B1**

Answer: C) 12 (3 kg = 3000 g; 3000 ÷ 250 = 12)

Question 2

correct option C (£24.00) cao; one costs 150p so 16 cost 16 x 150p **B1**

Answer: C) £24.00

Question 3

correct option D (Pack D) cao; the lowest price per unit is the best value **B1**

Answer: D) Pack D

Question 4

correct option A (£3.60) cao; one costs 30p so 12 cost 12 x 30p **B1**

Answer: A) £3.60

Question 5

correct option C (£0.80) cao; one costs 10p so 8 cost 8 x 10p **B1**

Answer: C) £0.80

Question 6

correct option E (Pack C) cao; the lowest price per unit is the best value **B1**

Answer: E) Pack C

Question 7

correct option B (£2.50) cao; one costs 25p so 10 cost 10 x 25p **B1**

Answer: B) £2.50

Question 8

correct option B (£17.00) cao; one costs 85p so 20 cost 20 x 85p **B1**

Answer: B) £17.00

Question 9

correct option C (Pack D) cao; the lowest price per unit is the best value **B1**

Answer: C) Pack D

Question 10

correct option B (50p) cao **B1**

Answer: B) 50p

Question 11

correct option E (Pack D) cao; the lowest price per unit is the best value **B1**

Answer: E) Pack D

Question 12

correct option E (£1.36) cao; one costs 8p so 17 cost 17 x 8p **B1**

Answer: E) £1.36

Question 13

correct option C (Pack B) cao; the lowest price per unit is the best value **B1**

Answer: C) Pack B

Question 14

correct option D (£1.20) cao; one costs 15p so 8 cost 8 x 15p **B1**

Answer: D) £1.20

Question 15

correct option A (Pack A) cao; the lowest price per unit is the best value **B1**

Answer: A) Pack A

Question 16

correct option B (£19.55) cao; one costs 85p so 23 cost 23 x 85p **B1**

Answer: B) £19.55

Question 17

correct option D (Pack C) cao; the lowest price per unit is the best value **B1**

Answer: D) Pack C

Question 18

correct option C (Pack E) cao; the lowest price per unit is the best value **B1**

Answer: C) Pack E

Question 19

correct option B (£24.00) cao; one costs 150p so 16 cost 16 x 150p **B1**

Answer: B) £24.00

Question 20

correct option E (Pack C) cao; the lowest price per unit is the best value **B1**

Answer: E) Pack C

Question 21

correct option D (Pack C) cao; the lowest price per unit is the best value **B1**

Answer: D) Pack C

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Question 22

correct option C (£36.00) cao; one costs 225p so 16 cost 16 x 225p **B1**

Answer: C) £36.00

Question 23

correct option A (Pack A) cao; the lowest price per unit is the best value **B1**

Answer: A) Pack A

Question 24

correct option A (Pack E) cao; the lowest price per unit is the best value **B1**

Answer: A) Pack E

Question 25

correct option C (£1.28) cao; one costs 8p so 16 cost 16 x 8p **B1**

Answer: C) £1.28

Question 26

correct option D (Pack E) cao; the lowest price per unit is the best value **B1**

Answer: D) Pack E

Question 27

correct option B (£7.70) cao; one costs 55p so 14 cost 14 x 55p **B1**

Answer: B) £7.70

Question 28

correct option E (Pack E) cao; the lowest price per unit is the best value **B1**

Answer: E) Pack E

Question 29

correct option B (the 1 L bottle) cao **B1**

Answer: B) The 1 L bottle

Question 30

correct calculation of pack after voucher: £5.60 × 0.90 = £5.04 seen **M1**

correct division to give per pen: £5.04 ÷ 5 = £1.008 seen **M1**

conclusion that the discounted pack gives cheaper pens at about £1.01 each cao **A1**

Answer: Discounted pack is cheaper. £5.60 × 0.90 = £5.04; £5.04 ÷ 5 = £1.008 -> about £1.01 per pen, cheaper than £1.25 single pen.

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