2.82 Direct Proportion and Value for Money: Test Pack

GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Six apples cost 90p. What is the cost of one apple?

- [ ] A) 1.5p
- [ ] B) 15p
- [ ] C) 14p
- [ ] D) 150p
- [ ] E) 18p

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2 6 pasties cost £0.60. How much do 7 pasties cost?

- [ ] A) £0.70
- [ ] B) £0.60
- [ ] C) £1.70
- [ ] D) £4.20
- [ ] E) £0.10

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3 6 balloons cost £9.00. How much do 10 balloons cost?

- [ ] A) £36.00
- [ ] B) £1.50
- [ ] C) £15.00
- [ ] D) £14.00
- [ ] E) £90.00

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4 Sienna compares packs of rice: pack A is 100 g for £0.46; pack B is 250 g for £1.38; pack C is 400 g for £2.72; pack D is 600 g for £3.00; pack E is 1000 g for £5.20. Which pack is the best value for money?

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

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5 Ben compares packs of washing liquid: pack A is 150 ml for £0.98; pack B is 250 ml for £1.68; pack C is 300 ml for £2.10; pack D is 400 ml for £1.72; pack E is 600 ml for £4.02. Which pack is the best value for money?

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

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6 3 balloons cost £0.24. How much do 11 balloons cost?

- ☐ A) £1.88
- ☐ B) £0.08
- ☐ C) £2.64
- ☐ D) £0.88
- ☐ E) £1.92

---

7 2 cakes cost £1.90. How much do 3 cakes cost?

- ☐ A) £2.85
- ☐ B) £5.70
- ☐ C) £1.90
- ☐ D) £1.85
- ☐ E) £0.95

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8 3 notebooks cost £3.00. How much do 18 notebooks cost?

- [ ] A) £54.00
- [ ] B) £1.00
- [ ] C) £19.00
- [ ] D) £15.00
- [ ] E) £18.00

---

9 6 cakes cost £1.80. How much do 9 cakes cost?

- [ ] A) £0.90
- [ ] B) £2.70
- [ ] C) £16.20
- [ ] D) £3.70
- [ ] E) £0.30

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10 4 pens cost £1.40. How much do 22 pens cost?

- [ ] A) £6.70
- [ ] B) £30.80
- [ ] C) £7.70
- [ ] D) £25.20
- [ ] E) £0.35

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11 10 apples cost £1.20. How much do 5 apples cost?

- [ ] A) £-6.00
- [ ] B) £-0.60
- [ ] C) £6.00
- [ ] D) £0.12
- [ ] E) £0.60

---

12 5 pasties cost £2.50. How much do 15 pasties cost?

- [ ] A) £37.50
- [ ] B) £6.50
- [ ] C) £25.00
- [ ] D) £0.50
- [ ] E) £7.50

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13 4 bus tickets cost £2.60. How much do 16 bus tickets cost?

- [ ] A) £41.60
- [ ] B) £11.40
- [ ] C) £0.65
- [ ] D) £31.20
- [ ] E) £10.40

---

14 10 postcards cost £12.00. How much do 23 postcards cost?

- [ ] A) £27.60
- [ ] B) £276.00
- [ ] C) £156.00
- [ ] D) £28.60
- [ ] E) £1.20

---

15 12 balloons cost £4.20. How much do 10 balloons cost?

- [ ] A) £42.00
- [ ] B) £3.50
- [ ] C) £0.42
- [ ] D) £-8.40
- [ ] E) £0.35

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16 12 bus tickets cost £6.00. How much do 22 bus tickets cost?

- [ ] A) £10.00
- [ ] B) £11.00
- [ ] C) £0.50
- [ ] D) £132.00
- [ ] E) £5.00

---

17 2 football stickers cost £0.20. How much do 17 football stickers cost?

- [ ] A) £2.70
- [ ] B) £0.70
- [ ] C) £3.40
- [ ] D) £0.10
- [ ] E) £1.70

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18 5 apples cost £11.25. How much do 18 apples cost?

- [ ] A) £29.25
- [ ] B) £40.50
- [ ] C) £146.25
- [ ] D) £2.25
- [ ] E) £202.50

---

19 5 bus tickets cost £1.50. How much do 20 bus tickets cost?

- [ ] A) £0.30
- [ ] B) £30.00
- [ ] C) £7.00
- [ ] D) £6.00
- [ ] E) £22.50

---

20 10 notebooks cost £2.00. How much do 19 notebooks cost?

- [ ] A) £4.80
- [ ] B) £3.80
- [ ] C) £2.80
- [ ] D) £38.00
- [ ] E) £0.20

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21 Three chocolate bars cost £1.35. What is the price of one bar?

- [ ] A) 55p
- [ ] B) 35p
- [ ] C) 50p
- [ ] D) 40p
- [ ] E) 45p

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22 Fatima compares packs of cereal: pack A is 125 g for £0.65; pack B is 200 g for £0.82; pack C is 300 g for £1.65; pack D is 800 g for £4.32; pack E is 1000 g for £6.30. Which pack is the best value for money?

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

---

23 3 pens cost £1.50. How much do 18 pens cost?

- [ ] A) £27.00
- [ ] B) £9.00
- [ ] C) £7.50
- [ ] D) £10.00
- [ ] E) £0.50

---

24 3 postcards cost £4.50. How much do 2 postcards cost?

- [ ] A) £9.00
- [ ] B) £1.50
- [ ] C) £4.00
- [ ] D) £3.00
- [ ] E) £2.00

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25 Grace compares packs of shampoo: pack A is 100 ml for £0.56; pack B is 600 ml for £3.72; pack C is 800 ml for £5.12; pack D is 1000 ml for £6.30; pack E is 1500 ml for £7.65. Which pack is the best value for money?

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

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26 Niamh compares packs of cereal: pack A is 100 g for £0.55; pack B is 400 g for £2.00; pack C is 600 g for £3.24; pack D is 1000 g for £5.90; pack E is 1200 g for £7.44. Which pack is the best value for money?

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

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27 Zainab compares packs of crisps: pack A is 100 g for £0.59; pack B is 400 g for £2.44; pack C is 500 g for £2.60; pack D is 600 g for £3.06; pack E is 750 g for £3.98. Which pack is the best value for money?

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

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28 8 balloons cost £8.00. How much do 16 balloons cost?

- ☐ A) £16.00
- ☐ B) £15.00
- ☐ C) £128.00
- ☐ D) £1.00
- ☐ E) £8.00

---

29 4 bus tickets cost £3.00. How much do 15 bus tickets cost?

- ☐ A) £11.25
- ☐ B) £0.75
- ☐ C) £8.25
- ☐ D) £33.00
- ☐ E) £45.00

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30 Esme compares packs of flour: pack A is 300 g for £1.77; pack B is 600 g for £3.72; pack C is 750 g for £4.12; pack D is 1000 g for £5.60; pack E is 1500 g for £9.00. Which pack is the best value for money?

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

---

31 6 bananas cost £6.00. How much do 3 bananas cost?

- ☐ A) £3.00
- ☐ B) £1.00
- ☐ C) £-18.00
- ☐ D) £4.00
- ☐ E) £18.00

---

32 4 rulers cost £1.80. How much do 12 rulers cost?

- ☐ A) £21.60
- ☐ B) £14.40
- ☐ C) £5.40
- ☐ D) £0.45
- ☐ E) £6.40

---

33 12 postcards cost £6.60. Tariq has £4.40. How many postcards can Tariq buy?

- ☐ A) 96
- ☐ B) 7
- ☐ C) 8
- ☐ D) 9
- ☐ E) 80

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34 Ravi compares packs of pasta: pack A is 250 g for £1.58; pack B is 300 g for £1.71; pack C is 500 g for £3.20; pack D is 800 g for £4.96; pack E is 1200 g for £7.56. Which pack is the best value for money?

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

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35 Tom compares packs of shampoo: pack A is 125 ml for £0.59; pack B is 500 ml for £2.95; pack C is 600 ml for £3.00; pack D is 750 ml for £3.90; pack E is 800 ml for £4.40. Which pack is the best value for money?

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

---

36 6 pens cost £0.90. How much do 3 pens cost?

- ☐ A) £2.70
- ☐ B) £0.45
- ☐ C) £0.15
- ☐ D) £-0.45
- ☐ E) £-2.70

---

37 3 football stickers cost £1.65. How much do 17 football stickers cost?

- ☐ A) £9.35
- ☐ B) £23.10
- ☐ C) £10.35
- ☐ D) £0.55
- ☐ E) £28.05

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38 Amara compares packs of rice: pack A is 125 g for £0.64; pack B is 150 g for £0.66; pack C is 200 g for £1.32; pack D is 250 g for £1.78; pack E is 1200 g for £6.72. Which pack is the best value for money?

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

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39 Sana compares packs of pasta: pack A is 100 g for £0.42; pack B is 250 g for £1.50; pack C is 600 g for £4.02; pack D is 750 g for £3.08; pack E is 1500 g for £6.15. Which pack is the best value for money?

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

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40 Aisha compares packs of pasta: pack A is 125 g for £0.65; pack B is 150 g for £0.63; pack C is 500 g for £2.00; pack D is 600 g for £3.84; pack E is 1200 g for £8.88. Which pack is the best value for money?

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

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41 Sana compares packs of cereal: pack A is 100 g for £0.42; pack B is 150 g for £0.87; pack C is 250 g for £1.18; pack D is 600 g for £3.96; pack E is 1500 g for £9.60. Which pack is the best value for money?

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

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42 5 bananas cost £1.25. How much do 24 bananas cost?

- [ ] A) £30.00
- [ ] B) £7.00
- [ ] C) £0.25
- [ ] D) £5.00
- [ ] E) £6.00

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43 5 cakes cost £3.75. How much do 4 cakes cost?

- [ ] A) £-3.75
- [ ] B) £3.00
- [ ] C) £15.00
- [ ] D) £4.00
- [ ] E) £0.75

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44 Declan compares packs of rice: pack A is 200 g for £1.10; pack B is 250 g for £1.48; pack C is 500 g for £3.35; pack D is 800 g for £4.24; pack E is 1200 g for £6.24. Which pack is the best value for money?

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

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45 Yusuf compares packs of cereal: pack A is 100 g for £0.58; pack B is 150 g for £0.80; pack C is 250 g for £1.50; pack D is 600 g for £4.26; pack E is 1000 g for £7.20. Which pack is the best value for money?

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

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46 8 bananas cost £3.60. How much do 19 bananas cost?

- [ ] A) £0.45
- [ ] B) £9.55
- [ ] C) £4.95
- [ ] D) £8.55
- [ ] E) £68.40

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47 6 rulers cost £0.60. How much do 13 rulers cost?

- [ ] A) £0.30
- [ ] B) £7.80
- [ ] C) £2.30
- [ ] D) £0.10
- [ ] E) £1.30

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48 Cereal A costs £2.40 for 400 g. Cereal B costs £2.90 for 500 g. Which cereal is cheaper per 100 g?

- [ ] A) Cereal A is twice the price of B
- [ ] B) Cannot tell
- [ ] C) Cereal B
- [ ] D) They cost the same
- [ ] E) Cereal A

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49 Aisha compares packs of pasta: pack A is 200 g for £1.00; pack B is 250 g for £1.42; pack C is 400 g for £2.68; pack D is 1000 g for £5.90; pack E is 1200 g for £6.84. Which pack is the best value for money?

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

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50 5 postcards cost £0.60. How much do 14 postcards cost?

- [ ] A) £2.68
- [ ] B) £0.12
- [ ] C) £1.68
- [ ] D) £0.68
- [ ] E) £8.40

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51 10 postcards cost £3.00. How much do 19 postcards cost?

- [ ] A) £2.70
- [ ] B) £4.70
- [ ] C) £0.30
- [ ] D) £57.00
- [ ] E) £5.70

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52 Jack compares packs of orange juice: pack A is 100 ml for £0.71; pack B is 250 ml for £1.20; pack C is 400 ml for £2.76; pack D is 500 ml for £3.75; pack E is 600 ml for £2.76. Which pack is the best value for money?

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

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53 Noah compares packs of cereal: pack A is 100 g for £0.45; pack B is 150 g for £0.76; pack C is 500 g for £2.60; pack D is 1200 g for £5.28; pack E is 1500 g for £9.00. 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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54 Ewan compares packs of rice: pack A is 125 g for £0.66; pack B is 150 g for £0.82; pack C is 300 g for £2.13; pack D is 600 g for £2.82; pack E is 1500 g for £12.60. Which pack is the best value for money?

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

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55 A 400 ml bottle of shampoo costs £3.20. The shop sells two 600 ml bottles for £5.60. Which offer gives better value per millilitre? Show your working.

(3)

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56 A toy shop sells small packs of 4 toys for £3.20 and large packs of 10 toys for £7.50. The shop runs a promotion: for every 3 large packs bought, you receive one small pack free. A customer needs 50 toys. Work out the least possible cost for the customer. Show your calculations.

(4)

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Mark scheme · 2.82 Direct Proportion and Value for Money: Test Pack

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

Question 1

correct option B (15p) cao **B1**

Answer: B) 15p

Question 2

correct option A (£0.70) cao; one costs 10p so 7 cost 7 x 10p **B1**

Answer: A) £0.70

Question 3

correct option C (£15.00) cao; one costs 150p so 10 cost 10 x 150p **B1**

Answer: C) £15.00

Question 4

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

Answer: D) Pack A

Question 5

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

Answer: A) Pack D

Question 6

correct option D (£0.88) cao; one costs 8p so 11 cost 11 x 8p **B1**

Answer: D) £0.88

Question 7

correct option A (£2.85) cao; one costs 95p so 3 cost 3 x 95p **B1**

Answer: A) £2.85

Question 8

correct option E (£18.00) cao; one costs 100p so 18 cost 18 x 100p **B1**

Answer: E) £18.00

Question 9

correct option B (£2.70) cao; one costs 30p so 9 cost 9 x 30p **B1**

Answer: B) £2.70

Question 10

correct option C (£7.70) cao; one costs 35p so 22 cost 22 x 35p **B1**

Answer: C) £7.70

Question 11

correct option E (£0.60) cao; one costs 12p so 5 cost 5 x 12p **B1**

Answer: E) £0.60

Question 12

correct option E (£7.50) cao; one costs 50p so 15 cost 15 x 50p **B1**

Answer: E) £7.50

Question 13

correct option E (£10.40) cao; one costs 65p so 16 cost 16 x 65p **B1**

Answer: E) £10.40

Question 14

correct option A (£27.60) cao; one costs 120p so 23 cost 23 x 120p **B1**

Answer: A) £27.60

Question 15

correct option B (£3.50) cao; one costs 35p so 10 cost 10 x 35p **B1**

Answer: B) £3.50

Question 16

correct option B (£11.00) cao; one costs 50p so 22 cost 22 x 50p **B1**

Answer: B) £11.00

Question 17

correct option E (£1.70) cao; one costs 10p so 17 cost 17 x 10p **B1**

Answer: E) £1.70

Question 18

correct option B (£40.50) cao; one costs 225p so 18 cost 18 x 225p **B1**

Answer: B) £40.50

Question 19

correct option D (£6.00) cao; one costs 30p so 20 cost 20 x 30p **B1**

Answer: D) £6.00

Question 20

correct option B (£3.80) cao; one costs 20p so 19 cost 19 x 20p **B1**

Answer: B) £3.80

Question 21

correct option E (45p) cao **B1**

Answer: E) 45p

Question 22

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

Answer: A) Pack B

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Question 23

correct option B (£9.00) cao; one costs 50p so 18 cost 18 x 50p **B1**

Answer: B) £9.00

Question 24

correct option D (£3.00) cao; one costs 150p so 2 cost 2 x 150p **B1**

Answer: D) £3.00

Question 25

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

Answer: C) Pack E

Question 26

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

Answer: B) Pack B

Question 27

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

Answer: C) Pack D

Question 28

correct option A (£16.00) cao; one costs 100p so 16 cost 16 x 100p **B1**

Answer: A) £16.00

Question 29

correct option A (£11.25) cao; one costs 75p so 15 cost 15 x 75p **B1**

Answer: A) £11.25

Question 30

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

Answer: E) Pack C

Question 31

correct option A (£3.00) cao; one costs 100p so 3 cost 3 x 100p **B1**

Answer: A) £3.00

Question 32

correct option C (£5.40) cao; one costs 45p so 12 cost 12 x 45p **B1**

Answer: C) £5.40

Question 33

correct option C (8) cao; unit cost is 55p **B1**

Answer: C) 8

Question 34

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

Answer: D) Pack B

Question 35

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

Answer: D) Pack A

Question 36

correct option B (£0.45) cao; one costs 15p so 3 cost 3 x 15p **B1**

Answer: B) £0.45

Question 37

correct option A (£9.35) cao; one costs 55p so 17 cost 17 x 55p **B1**

Answer: A) £9.35

Question 38

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

Answer: C) Pack B

Question 39

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

Answer: C) Pack E

Question 40

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

Answer: E) Pack C

Question 41

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

Answer: C) Pack A

Question 42

correct option E (£6.00) cao; one costs 25p so 24 cost 24 x 25p **B1**

Answer: E) £6.00

Question 43

correct option B (£3.00) cao; one costs 75p so 4 cost 4 x 75p **B1**

Answer: B) £3.00

Question 44

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

Answer: C) Pack E

Question 45

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

Answer: D) Pack B

Question 46

correct option D (£8.55) cao; one costs 45p so 19 cost 19 x 45p **B1**

Answer: D) £8.55

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Question 47

correct option E (£1.30) cao; one costs 10p so 13 cost 13 x 10p **B1**

Answer: E) £1.30

Question 48

correct option C (Cereal B) cao **B1**

Answer: C) Cereal B

Question 49

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

Answer: E) Pack A

Question 50

correct option C (£1.68) cao; one costs 12p so 14 cost 14 x 12p **B1**

Answer: C) £1.68

Question 51

correct option E (£5.70) cao; one costs 30p so 19 cost 19 x 30p **B1**

Answer: E) £5.70

Question 52

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

Answer: D) Pack E

Question 53

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

Answer: B) Pack D

Question 54

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

Answer: E) Pack D

Question 55

correct method for single bottle: 320p ÷ 400 = 0.8 p per ml seen **M1**

correct method for two-bottle deal: 560p ÷ 1200 = 0.4666... p per ml seen **M1**

conclusion that the two-for-£5.60 deal is better value cao **A1**

Answer: Two-for deal is better value. Single: 320p ÷ 400 ml = 0.8 p/ml. Two for £5.60: 560p ÷ 1200 ml approx 0.4667 p/ml. The two-bottle offer is cheaper per ml.

Question 56

correct use of the promotion to find toys from 3 large packs: 3 × 10 = 30 plus one free small pack = 34 toys seen **M1**

correct cost calculation for 3 large packs: 3 × £7.50 = £22.50 seen **M1**

correct calculation of additional small packs needed and their cost: need 16 more toys -> 4 small packs cost 4 × £3.20 = £12.80 seen **M1**

final minimum cost given as £35.30 cao with correct justification **A1**

Answer: Least cost £35.30. Buy 3 large packs (£22.50) which gives 30 toys plus one free small pack (4) = 34 toys. Need 16 more -> 4 small packs at £3.20 = £12.80. Total £22.50 + £12.80 = £35.30.

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