3.12 Best Buy Questions: 1-hour Pack

EDEXCEL 1MA1 · Calculator allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A 600 g bag of cereal costs £1.50. Work out the cost per 100 g.

(Total for Question 1 is 1 mark)

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2 A chocolate bar is sold singly for 95p or as 4 bars for £3.20. Which is the better buy by unit price? Show your working.

(Total for Question 2 is 2 marks)

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3 A 400 g pack of birdseed costs £1.60. Work out the cost of 1.4 kg of birdseed.

(Total for Question 3 is 2 marks)

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4 A pack of 4 batteries costs £2.60. A pack of 10 batteries costs £6.00. Which pack is better value per battery? Show your working.

(Total for Question 4 is 2 marks)

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5 A 500 g bag of pasta costs £1.20. Work out the cost per 100 g.

(Total for Question 5 is 1 mark)

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6 A box of 12 fish fingers costs £3.00. A portion uses 3 fish fingers. Work out the cost of one portion.

(Total for Question 6 is 2 marks)

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7 Jo buys a 750 g bag of rice for 1.95. Work out the price of 100 g of rice. Give your answer in pence, correct to 1 decimal place if necessary.

(Total for Question 7 is 2 marks)

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8 Shampoo is sold in a 250 ml bottle for £3.60 and a 500 ml bottle for £6.40. Which bottle is better value per 100 ml? Show working.

(Total for Question 8 is 2 marks)

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9 Which is better value per kg: a 2 kg bag of flour for £2.40 or a 500 g pack for 72p? Work out the cost per kg for both.

(Total for Question 9 is 2 marks)

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10 A 1.2 kg bag of sugar costs £3.60. Work out the cost of 300 g of sugar.

(Total for Question 10 is 2 marks)

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11 Hand wash is sold in a 300 ml bottle for £1.80 and a 500 ml refill pouch for £2.50. Which is better value per 100 ml? Show your working.

(Total for Question 11 is 2 marks)

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12 Which is better value per kg: a 250 g block of cheese for £2.10, or a 400 g block for £3.20? Work out the cost per kg for both.

(Total for Question 12 is 2 marks)

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13 A 3 kg bag of dog food costs £9.00. Work out the cost of 800 g of dog food.

(Total for Question 13 is 2 marks)

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14 A supermarket sells a 500 g jar of jam for 1.40 or a 340 g jar for 1.00.
Work out which jar is better value and show the price per 100 g for the better value jar.

(Total for Question 14 is 3 marks)

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15 A chocolate costs £1.20 each. You can buy a pack of 5 for £5.00 or take a "3 for 2" offer in the shop. Which way is cheapest if you need 9 bars? Show working.

(Total for Question 15 is 3 marks)

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16 A 2.25 kg bag of rice costs £4.95. Work out the cost per 100 g. Give your answer in pence.

(Total for Question 16 is 2 marks)

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17 A 1.5 kg bag of porridge oats costs £2.70. Work out the cost per 100 g. Give your answer in pence.

(Total for Question 17 is 2 marks)

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18 Compare three coffee options and state the cheapest per 100 g and how much cheaper per 100 g it is than the most expensive option.
A: 200 g jar £2.40. B: 500 g jar £5.70. C: 1 kg bag £10.80.
Work out per 100 g prices and the difference between best and worst.

(Total for Question 18 is 3 marks)

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19 Two brands of dishwasher tablets are sold. Brand A: 30 tablets for £6.90, and a normal wash uses 1 tablet. Brand B: 45 tablets for £9.45, but each wash needs 1.5 tablets for a full-size load. Work out the cost per wash for each brand and state which is better value per wash.

(Total for Question 19 is 3 marks)

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20 A shop sells fabric by the metre. The price per metre is p pounds. There is a special offer: buy at least 2 metres and get 15% off the total price; buy 5 or more metres and get 25% off the total price.

(a) For a customer buying 4 metres, show in terms of p the total cost after discount. **(2)**

(b) For what values of p ($p > 0$) will the cost for 4 metres after that discount be less than £40? Give your answer as an inequality and solve. **(4)**

(Total for Question 20 is 6 marks)

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Mark scheme · 3.12 Best Buy Questions: 1-hour Pack

Question 1

25p per 100 g cao **B1**

Answer: 25p per 100 g (150p/600g = 0.25p per g, so 25p per 100 g).

Question 2

Calculate unit prices: 95p for single, 320p/4 = 80p each **M1**

State 4 for £3.20 is better value, 80p each cao **A1**

Answer: 4 for £3.20 is better value; 80p each rather than 95p each.

Question 3

Recognise 1.4 kg is 3.5 times 400 g and multiply: 1.60 * 3.5 **M1**

£5.60 cao **A1**

Answer: £5.60 (3.5 x £1.60).

Question 4

Calculate unit prices: 260p/4 = 65p; 600p/10 = 60p **M1**

10 pack is better value, 60p per battery cao **A1**

Answer: 10 pack is better value: 60p per battery (4 pack is 65p per battery).

Question 5

24p per 100 g cao **B1**

Answer: 24p per 100 g (120p/500g = 0.24p per g, so 24p per 100 g).

Question 6

Find unit price: 300p/12 = 25p per fish finger **M1**

75p cao **A1**

Answer: 75p (25p per fish finger x 3 = 75p per portion).

Question 7

correct method, e.g. 1.95/750 × 100 or 1.95 × (100/750) shown **M1**

26.0p cao **A1**

Answer: 26.0p

Question 8

Calculate per 100 ml: 250 ml bottle = 360p/250*100 = 144p; 500 ml bottle = 640p/500*100 = 128p **M1**

500 ml bottle is better value, 128p per 100 ml cao **A1**

Answer: 500 ml bottle is better value: 128p per 100 ml (250 ml bottle is 144p per 100 ml).

Question 9

Calculate 2 kg bag: 240p/2 = 120p per kg; 500 g pack: 72p/0.5 = 144p per kg **M1**

2 kg bag is better value, 120p per kg cao **A1**

Answer: 2 kg bag is better value: 120p per kg vs 144p per kg for the 500 g pack.

Question 10

Scale: 300/1200 of £3.60 or 360p * 300/1200 **M1**

90p cao **A1**

Answer: 90p (360p * 300/1200 = 90p).

Question 11

Calculate per 100 ml: 300 ml bottle = 180p/300*100 = 60p; 500 ml pouch = 250p/500*100 = 50p **M1**

500 ml refill pouch is better value, 50p per 100 ml cao **A1**

Answer: 500 ml refill pouch is better value: 50p per 100 ml (300 ml bottle is 60p per 100 ml).

Question 12

Calculate 250 g block: 210p/0.25 = 840p per kg; 400 g block: 320p/0.4 = 800p per kg **M1**

400 g block is better value, 800p per kg cao **A1**

Answer: 400 g block is better value: 800p per kg vs 840p per kg for the 250 g block.

Question 13

Scale: 800/3000 of £9.00 or 900p * 800/3000 **M1**

£2.40 cao **A1**

Answer: £2.40 (900p x 800/3000 = 240p).

Question 14

method for unit price for at least one jar e.g. 1.40/500 = 0.0028 or 1.00/340 = 0.002941... **M1**

compare and identify better value jar (500 g is cheaper) shown **M1**

price per 100 g for 500 g jar = 0.28 (28p) cao **A1**

Answer: 500 g jar is better value; 100 g costs 0.28 (28p)

Question 15

Compute cost as singles: 9 * £1.20 = £10.80 or as two 5-packs = £10.00 **M1**

Compute cost with 3 for 2: for 9 bars pay for 6 -> 6 * £1.20 = £7.20 **M1**

3 for 2 is cheapest, £7.20 cao **A1**

Answer: 3 for 2 is cheapest: cost = £7.20 (pay for 6 bars). Singles cost £10.80, two 5-packs cost £10.00.

Question 16

Calculate 495p / 2250 g * 100 to find per 100 g **M1**

22p per 100 g cao **A1**

Answer: 22p per 100 g (495p / 2250 * 100 = 22p).

Question 17

Calculate 270p / 1500 g * 100 to find per 100 g **M1**

18p per 100 g cao **A1**

Answer: 18p per 100 g (270p / 1500 * 100 = 18p).

Question 18

Calculate unit prices: A = 240p/200*100 = 120p; B = 570p/500*100 = 114p; C = 1080p/1000*100 = 108p **M1**

Identify cheapest = C at 108p per 100 g **M1**

State difference worst - best = 120p - 108p = 12p cao **A1**

Answer: Per 100 g: A = 120p, B = 114p, C = 108p. Cheapest is C (108p per 100 g). It is 12p per 100 g cheaper than the worst (A).

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Question 19

Cost per tablet: Brand A = 690/30 = 23p; Brand B = 945/45 = 21p **M1**

Cost per wash: Brand A = 23p; Brand B = 21p * 1.5 = 31.5p **M1**

Brand A is better value per wash, 23p cao **A1**

Answer: Brand A is better value: 23p per wash (Brand B costs 31.5p per wash).

Question 20

(a) form 4p * (1 - 0.15) or 4p * 0.85 **M1**

(a) correct expression 3.4 p cao **A1**

(a) Answer: Total cost = 4p * 0.85 = 3.4 p. Working check: 15% off means pay 85% so 4p*0.85 = 3.4p.

(b) form inequality 3.4 p < 40 **M1**

(b) solve p < 40 / 3.4 **M1**

(b) compute 40 / 3.4 = 11.764705... and round appropriately **A1**

(b) final inequality p < 11.76... so p < 11.76(47) or p < 11.76 to 2 dp and state p > 0 **A1**

(b) Answer: Inequality: 3.4 p < 40 -> p < 40 / 3.4 = 11.764705... So for p > 0 the cost is less than £40 when p < 11.764705... (approximately p < £11.76). Working check: p = 11.76 gives 3.4*11.76 = 40.0 approx.

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