

Best Buys

Solutions

For AQA GCSE Mathematics (8300) • Foundation tier

Each question is shown in grey, followed by the working, one step per line. The final answer is in a box. *Marks* shows how the marks are usually given in the exam, and **Tip** points out a common mistake.

1 (2 marks)

Olive oil is sold in two sizes of bottle.

Small bottle	Large bottle
500 ml	1 litre
£3.20	£6.60

Nell says,

‘The large bottle is better value for money.’

Is Nell correct?

Tick a box.

You must show your working.

Compare the price of the same amount of oil.

1 litre = 1000 ml, which is the same as 2 small bottles.

2 small bottles cost $2 \times 3.20 = £6.40$

The large bottle costs £6.60 for the same amount.

£6.40 is less than £6.60, so the small bottles are better value.

Answer: No (1 litre costs £6.40 in small bottles, but £6.60 in the large bottle)

Tip: A bigger pack is not always better value. Always work out comparable values before you decide.

Marks: 1 mark for comparable values, e.g. £6.40 for 1 litre, or 64p and 66p per 100 ml. 1 mark for No with correct values.

2 (4 marks)

Anwen can buy bird seed online or at a garden centre.

Online	Garden centre
500 g bag £2.25	1.5 kg bag £7.60
Delivery £1.99 per order	No delivery charge

Where is it cheaper for Anwen to buy 3 kg of bird seed?

Show working to support your answer.

Online: $3 \text{ kg} = 3000 \text{ g}$, and $3000 \div 500 = 6$ bags.

$$6 \times 2.25 = \text{£}13.50$$

Add the delivery charge: $13.50 + 1.99 = \text{£}15.49$

Garden centre: $3 \text{ kg} \div 1.5 \text{ kg} = 2$ bags.

$$2 \times 7.60 = \text{£}15.20$$

£15.20 is less than £15.49, so the garden centre is cheaper (by 29p).

Answer: The garden centre (£15.20 compared with £15.49)

Tip: Don't forget the delivery charge. Without it the online shop looks cheaper (£13.50), but it is only charged once, not once per bag.

Marks: 1 mark for 6 bags or 2 bags. 1 mark for £15.49. 1 mark for £15.20. 1 mark for garden centre with both totals.

3 (3 marks)

Yoghurts are sold in packs of 4 and packs of 6

4-pack	6-pack
£1.85	£2.59

How much less does one yoghurt cost in the 6-pack than in the 4-pack?

Give your answer to 1 decimal place.

$$4\text{-pack: } \text{£}1.85 = 185\text{p}$$

$$185 \div 4 = 46.25\text{p per yoghurt}$$

6-pack: $\pounds 2.59 = 259\text{p}$

$259 \div 6 = 43.166 \dots \text{p per yoghurt}$

Difference = $46.25 - 43.166 \dots = 3.083 \dots$

= 3.1p (to 1 decimal place)

Answer: 3.1 pence

Tip: Work in pence and keep the full calculator values until the end. Round only your final answer.

Marks: 1 mark for 46.25p or 43.2p. 1 mark for both. 1 mark for 3.1.

4 (5 marks)

Two shops sell tins of beans.

Shop A
1 tin 64p
Buy 4 tins for the
price of 3 tins

Shop B
1 tin 62p
Pack of 3 tins $\pounds 1.70$
10% reduction in price
on all packs

At which shop is it cheaper to buy 20 tins?

State how much cheaper.

Shop A: 20 tins is 5 lots of 4 tins.

For each 4 tins you pay for 3, so you pay for $5 \times 3 = 15$ tins.

$15 \times 64 = 960\text{p} = \pounds 9.60$

Shop B: a pack costs $\pounds 1.70$ with 10% off.

10% of $\pounds 1.70 = 17\text{p}$, so a pack costs $1.70 - 0.17 = \pounds 1.53$

6 packs give 18 tins: $6 \times 1.53 = \pounds 9.18$

2 more single tins at full price: $2 \times 62 = \pounds 1.24$

Total at Shop B = $9.18 + 1.24 = \pounds 10.42$

Shop A is cheaper by $10.42 - 9.60 = £0.82$

Answer: Shop A, cheaper by 82p

Tip: At Shop B the 10% is only off the packs, and 20 tins is 6 packs plus 2 single tins. Write money correctly: 82p or £0.82, not 0.82p.

Marks: 1 mark for paying for 15 tins at Shop A. 1 mark for £9.60. 1 mark for £1.53. 1 mark for £10.42. 1 mark for Shop A, cheaper by 82p.

5 (4 marks)

A printer can use either of two ink cartridges.

Cartridge A
Prints 360 pages
Normal price £14.40
Offer: $\frac{1}{4}$ off

Cartridge B
Prints 600 pages
Price £22.50

Which cartridge is better value?

You must show your working.

Compare the cost of printing one page.

Cartridge A: $\frac{1}{4}$ of £14.40 = £3.60

Offer price = $14.40 - 3.60 = £10.80 = 1080\text{p}$

$1080 \div 360 = 3\text{p per page}$

Cartridge B: £22.50 = 2250p

$2250 \div 600 = 3.75\text{p per page}$

Cartridge A costs less per page, so Cartridge A is better value.

Answer: Cartridge A (3p per page compared with 3.75p)

Tip: Use the offer price, not the normal price, for Cartridge A. With the normal price it would cost 4p per page and you would pick the wrong cartridge.

Marks: 1 mark for £10.80. 1 mark for a cost per page. 1 mark for 3p and 3.75p. 1 mark for Cartridge A.

6 (2 marks)

A swimming pool charges £4.80 for each swim.

A monthly pass costs £39.50 and lets you swim as often as you like.

Kwame will swim twice a week for 4 weeks.

Is the monthly pass cheaper for Kwame?

Tick a box.

You must show your working.

Paying for each swim: $2 \times 4 = 8$ swims.

$8 \times 4.80 = £38.40$

The monthly pass costs £39.50

£38.40 is less than £39.50, so no, the pass is not cheaper (it costs £1.10 more).

Answer: No (£38.40 compared with £39.50)

Marks: 1 mark for 8 swims or £38.40. 1 mark for No with both amounts.
