

Exchange Rates

Solutions

For Pearson Edexcel GCSE Mathematics (1MA1) • 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 (4 marks)

The exchange rate is £1 = 1.14 euros.

(a) Change £240 into euros.

Each £1 is worth 1.14 euros.

Pounds to euros: multiply by 1.14

$$240 \times 1.14 = 273.6$$

Write money with 2 decimal places: 273.60 euros.

Answer: 273.60 euros

Marks: 1 mark for 240×1.14 . 1 mark for 273.60

(b) Change 399 euros into pounds.

Euros to pounds: divide by 1.14

$$399 \div 1.14 = 350$$

Check: there should be fewer pounds than euros. ✓

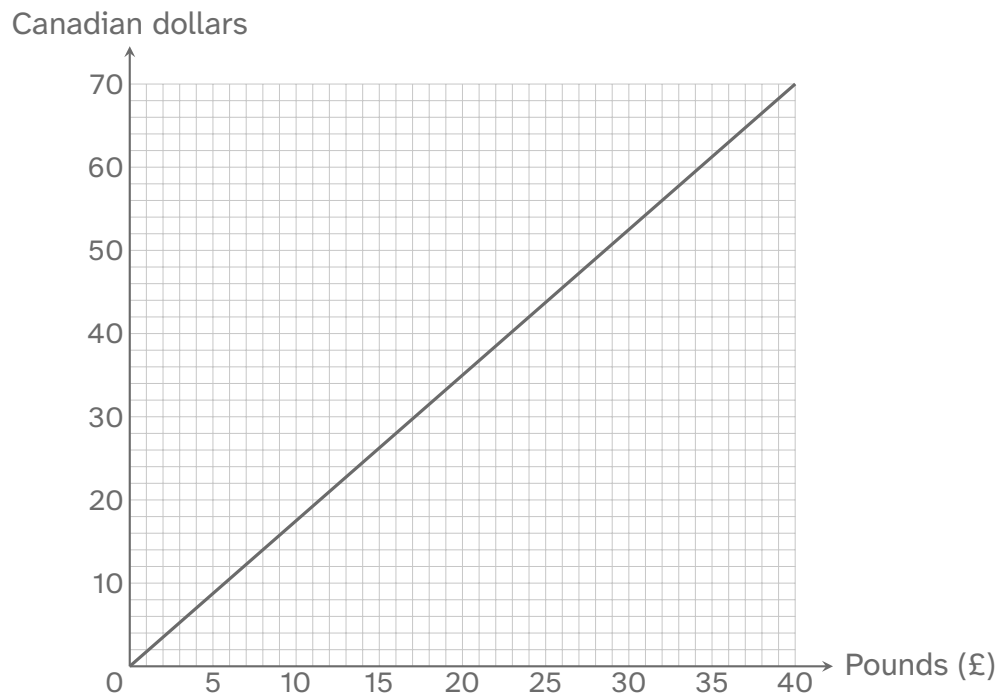
Answer: £350

Tip: Pounds → euros: multiply. Euros → pounds: divide. Multiplying here (399×1.14) is the most common wrong method.

Marks: 1 mark for $399 \div 1.14$. 1 mark for 350.

2 (3 marks)

This graph can be used to change between British pounds (£) and Canadian dollars.



Ffion changes £180 into Canadian dollars.

Work out how many Canadian dollars she gets.

The graph only goes up to £40, so read off a pair of values and scale up.

The line passes through a grid point at £40 and 70 Canadian dollars.

So £40 = 70 Canadian dollars

$$180 \div 40 = 4.5$$

So £180 is 4.5 lots of £40

$$4.5 \times 70 = 315$$

Answer: 315 Canadian dollars

Tip: Choose a reading far from 0 where the line crosses a grid point exactly (e.g. £40 = 70 dollars, or £8 = 14 dollars). Scaling up a rough reading multiplies the error too.

Marks: 1 mark for reading a pair of values from the graph. 1 mark for scaling up correctly. 1 mark for 315.

3 (3 marks)

Elliot needs some printer ink cartridges.

A UK website sells a pack of 4 cartridges for £23.60

A German website sells a pack of 6 of the same cartridges for 39.44 euros.

The exchange rate is £1 = 1.16 euros.

Which website sells the ink cartridges at the lower cost per cartridge?

You must show how you get your answer.

First change the German price into pounds (divide by 1.16):

$39.44 \div 1.16 = 34.00$, so the German pack costs £34.00

The packs are different sizes, so find the cost of 1 cartridge on each website.

Germany: $£34.00 \div 6 = £5.666\dots$, about £5.67

UK: $£23.60 \div 4 = £5.90$

£5.67 is less than £5.90

So the German website is cheaper per cartridge.

Answer: The German website

Tip: Changing the currency is only half the job. You must also compare the **same** number of cartridges (for example the cost of 1, or of 12).

Marks: 1 mark for 34.00. 1 mark for two values you can compare (e.g. £5.67 and £5.90 per cartridge). 1 mark for the German website, with correct working.

4 (4 marks)

A UK shop sells a 15 m garden hose for £14.25

A US shop sells a 60 foot garden hose for 23.40 US dollars.

£1 = 1.30 US dollars

1 foot = 30 cm

Which garden hose is better value for money, the UK hose or the US hose?

You must show how you get your answer.

Change the US price into pounds (divide by 1.30):

$23.40 \div 1.30 = 18.00$, so the US hose costs £18.00

Change 60 feet into metres:

$$60 \times 30 = 1800 \text{ cm} = 18 \text{ m}$$

$$\text{US cost per metre: } £18.00 \div 18 = £1.00$$

$$\text{UK cost per metre: } £14.25 \div 15 = £0.95$$

£0.95 is less than £1.00

So the UK hose is better value.

Answer: The UK hose

Tip: There are two conversions here: dollars to pounds **and** feet to metres. Do both before you compare.

Marks: 1 mark for changing the currency (18.00). 1 mark for changing the length (18 m). 1 mark for two values you can compare. 1 mark for the UK hose, with correct working.

5 (3 marks)

Dana has a job in the UK. It pays £33 000 per year.

She is offered a job in Ireland. It pays 3250 euros per month.

$$£1 = 1.20 \text{ euros}$$

Dana wants the job that pays more per year.

Which job should she choose?

You must show how you get your answer.

Find the Irish pay for one year:

$$3250 \times 12 = 39\,000 \text{ euros}$$

Change this into pounds (divide by 1.20):

$$39\,000 \div 1.20 = 32\,500$$

So the job in Ireland pays £32 500 a year.

The UK job pays £33 000 a year.

£33 000 is more than £32 500

So Dana should choose the UK job (it pays £500 more a year).

Answer: The UK job (£33 000 a year, compared with £32 500)

Tip: Compare like with like: both jobs must be in the same currency **and** for the same length of time (a year).

Marks: 1 mark for 39 000. 1 mark for 32 500. 1 mark for a correct conclusion using both values.

6 (2 marks)

A tablet costs 395 euros.

The exchange rate is £1 = 1.17 euros.

Josh says,

‘The tablet costs less than £300’

Do **not** use a calculator for this question.

Use approximations to show that Josh is wrong.

Find roughly how many euros £300 would buy.

Round 1.17 **up** to 1.2

$$300 \times 1.2 = 360 \text{ euros}$$

So £300 buys less than 360 euros.

The tablet costs 395 euros, which is more than 360 euros.

So the tablet costs more than £300. Josh is wrong.

(Another way: $400 \div 1.2 \approx 333$, so the tablet costs about £330, which is more than £300.)

Answer: £300 buys less than 360 euros, and the tablet costs 395 euros, so it costs more than £300. Josh is wrong.

Tip: Show your rounded numbers and say clearly what your estimate tells you about Josh's claim.

Marks: 1 mark for a suitable approximation such as 300×1.2 or $400 \div 1.2$. 1 mark for a correct conclusion.

7 (4 marks)

Ciara runs an online shop.

She buys 40 scarves from a supplier in Italy.

Each scarf costs 9.50 euros.

She also pays £35 for delivery.

She sells all 40 scarves for £16 each.

£1 = 1.14 euros

Ciara says,

‘I will make more than £250 profit.’

Is Ciara correct?

You must show how you get your answer.

Cost of the scarves in euros: $40 \times 9.50 = 380$ euros

Change into pounds (divide by 1.14): $380 \div 1.14 = 333.33$

Add the delivery: $£333.33 + 35 = £368.33$

Money from selling the scarves: $40 \times 16 = £640$

Profit = $640 - 368.33 = £271.67$

£271.67 is more than £250

So Ciara is correct.

Answer: Yes, her profit is £271.67

Tip: Remember to include the delivery cost in pounds. It is already in pounds, so do not convert it.

Marks: 1 mark for 380 euros. 1 mark for 333.33. 1 mark for 368.33 or 640. 1 mark for Yes with 271.67.
