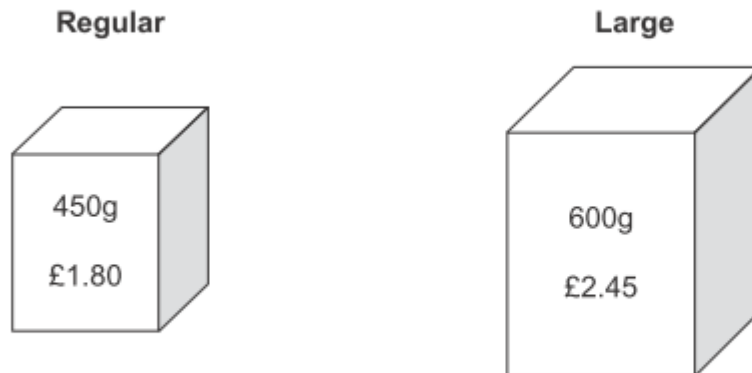# Core Maths Transition Assessment 1

Try as many questions as you can in any order. Calculators are allowed, but there are method marks available, so show your workings.

1.

A supermarket sells boxes of cereal in two sizes.

Regular	Large

450g
£1.80

600g
£2.45

Which box gives the better value for money?
You **must** show your working.

[3 marks]

2.

A bottle of perfume has a recommended retail price of £57

Rachel goes on holiday.

The perfume is sold on the plane at 35% less than the recommended retail price.

She also sees the perfume on sale for 42.90 euros in a shop.

£1 = 1.10 euros

Is the perfume cheaper on the plane or in the shop?
You **must** show your working.

[4 marks]

3.

Bottles of shower gel are on offer in three shops.
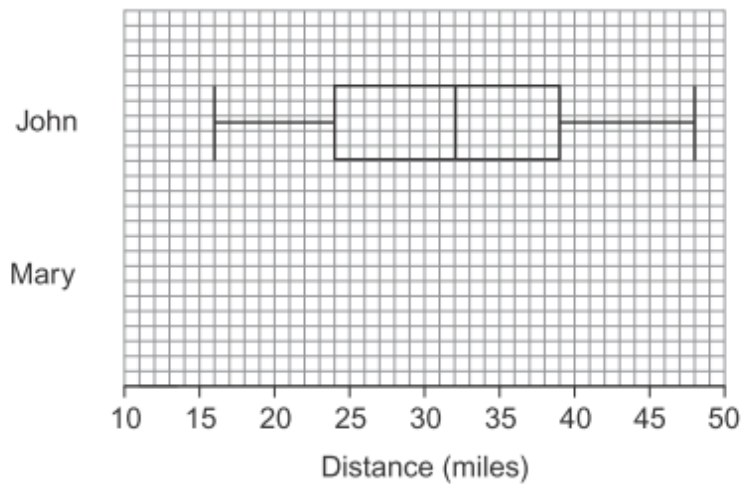The bottles are usually the same price in each shop.

Shop A	Shop B	Shop C
Buy two get one free	Buy one get one half price	40% off

Which offer is the best value?
You **must** show your working.

[4 marks]

4.

John and Mary are training for a cycle race.
The box-and-whisker plot shows information about the distance John cycles each day.

Distance (miles)

(a)   Write down the median distance John cycles each day.

[1 mark]

(b)   Work out the inter-quartile range of the distance John cycles each day.

[2 marks]

(c)   The table shows information about the distance Mary cycles each day.

|	Smallest	Lower quartile	Median	Upper quartile	Largest
Distance (miles)	16	27	34	38	48

Copy the scale and

draw a box-and-whisker plot to show this information.

[3 marks]

(d)   Make **two** comparisons of the distances John and Mary cycle.

[2 marks]

5.

Lisa sees two different accounts advertised at her local building society.

Account 1
Annual gross interest rate 2.75%
Interest calculated and paid monthly
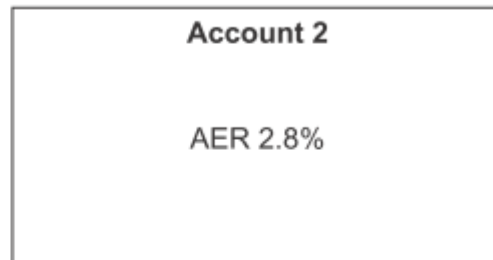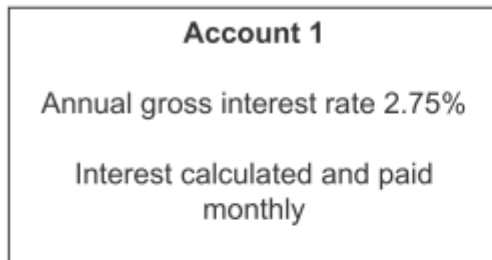
Account 2
AER 2.8%

Lisa wants to open the account with the highest AER(%)

She uses this formula to work out the AER for Account 1

$$AER = \left(\left(1 + \frac{r}{100n}\right)^n - 1\right) \times 100$$

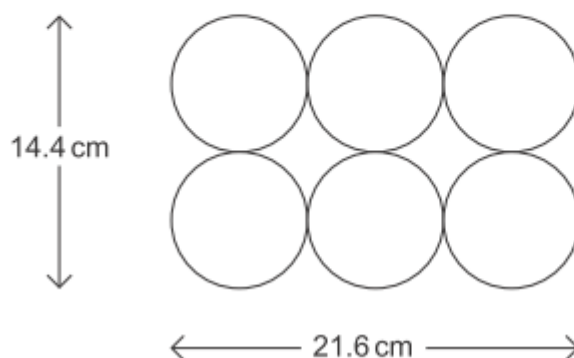where $r = 2.75$ and n is the number of times that interest is paid per year.

Which account should Lisa open?
You **must** show your working.

[3 marks]

6.

Six tins of soup are arranged in a pack.
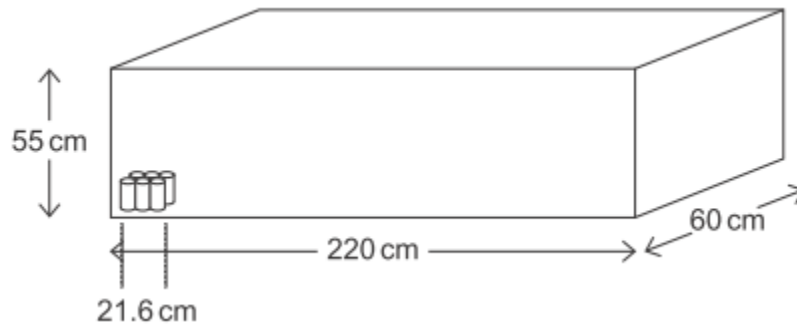The tins are identical cylinders.

A plan view of the pack is shown.

14.4 cm

21.6 cm

Not drawn accurately

Ben works at a supermarket.
He puts some of the packs on a shelf.

- The space on the shelf is a cuboid measuring 220 cm by 60 cm by 55 cm
- Each pack has height 10.7 cm
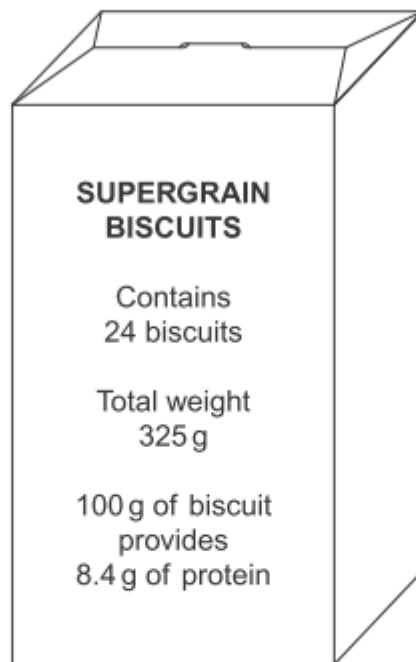- The packs are all arranged on the shelf in the same way.

Work out the **maximum** number of packs Ben can put on the shelf.

[5 marks]

7.

The diagram shows a 325 g pack of breakfast biscuits.

SUPERGRAIN BISCUITS

Contains
24 biscuits

Total weight
325 g

100 g of biscuit
provides
8.4 g of protein

The Guideline Daily Amount (GDA) of protein is 55 g

One day, Joe eats three biscuits.

He says,

    "This provides me with between 6% and 7% of my GDA of protein."

Show that Joe is correct.

[4 marks]

Total marks: 31