1   There are only blue pens, green pens and red pens in a box.

The ratio of the number of blue pens to the number of green pens is 2 : 5
The ratio of the number of green pens to the number of red pens is 4 : 1

There are less than 100 pens in the box.

What is the greatest possible number of red pens in the box?

....

(Total for Question   is 3 marks)

2   In a village

> the number of houses and the number of flats are in the ratio 7 : 4
> the number of flats and the number of bungalows are in the ratio 8 : 5

There are 50 bungalows in the village.

How many houses are there in the village?

....

(Total for Question   is 3 marks)

3 £360 is shared between Abby, Ben, Chloe and Denesh.

The ratio of the amount Abby gets to the amount Ben gets is $2:7$

Chloe and Denesh each get 1.5 times the amount Abby gets.

Work out the amount of money that Ben gets.

£...

(Total for Question   is 4 marks)

4 Tom and Adam have a total of 240 stamps.
The ratio of the number of Tom's stamps to the number of Adam's stamps is $3:7$

Tom buys some stamps from Adam.
The ratio of the number of Tom's stamps to the number of Adam's stamps is now $3:5$

How many stamps does Tom buy from Adam?
You must show all your working.

....

(Total for Question   is 4 marks)

5 A group of people went to a restaurant.
Each person chose one starter and one main course.

starter	main course
soup	lasagne
prawns	curry

the number of people who chose soup : the number of people who chose prawns = 2 : 3

Of those who chose soup,
the number of people who chose lasagne : the number of people who chose curry = 5 : 3

Of those who chose prawns,
the number of people who chose lasagne : the number of people who chose curry = 1 : 5

What fraction of the people chose curry?
You must show how you get your answer.

....

(Total for Question   is 4 marks)

6 Given that $\dfrac{a}{b} = \dfrac{2}{5}$ and $\dfrac{b}{c} = \dfrac{3}{4}$

find $a:b:c$

(Total for Question   is 3 marks)
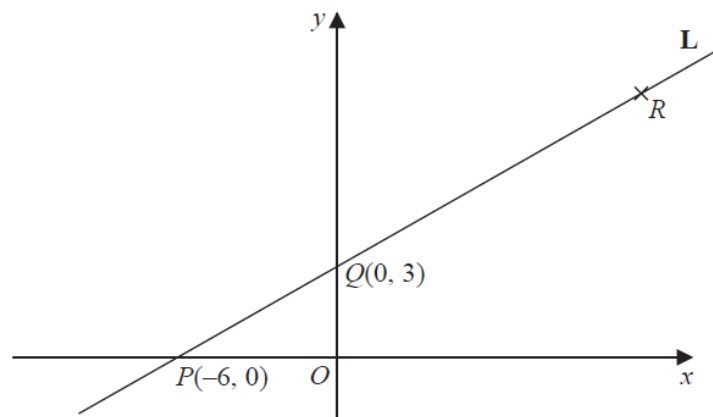
7   Rosie, Matilda and Ibrahim collect stickers.

$$\begin{array}{c}\text{number of stickers}\\\text{Rosie has}\end{array} : \begin{array}{c}\text{number of stickers}\\\text{Matilda has}\end{array} : \begin{array}{c}\text{number of stickers}\\\text{Ibrahim has}\end{array} = 4:7:15$$

Ibrahim has 24 more stickers than Matilda.

Ibrahim has more stickers than Rosie.
How many more?

....

(Total for Question   is 3 marks)

8 Here is a sketch of the line **L**.

The points $P(-6, 0)$ and $Q(0, 3)$ are points on the line **L**.

The point R is such that PQR is a straight line and $PQ:QR = 2:3$

(a) Find the coordinates of R.

(.......................... , ...)

(2)

(b) Find an equation of the line that is perpendicular to **L** and passes through Q.

....

(3)

(Total for Question **is 5 marks)**

9   Natalie makes potato cakes in a restaurant.

She mixes potato, cheese and onion so that

$$\text{weight of potato} : \text{weight of cheese} : \text{weight of onion} = 9 : 2 : 1$$

Natalie needs to make 6000 g of potato cakes.

Cheese costs £2.25 for 175 g.

Work out the cost of the cheese needed to make 6000 g of potato cakes.

£...

(Total for Question   is 4 marks)

10   Olivia and Jessica have in total half as many sweets as Fran and Gary have in total.

Fran and Gary share their sweets in the ratio $2:3$
Olivia and Jessica share their sweets in the ratio $9:1$

Fran got w sweets.
Gary got x sweets.
Olivia got y sweets.
Jessica got z sweets.

Find, in its simplest form, $w:x:y:z$

(Total for Question   is 4 marks)