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?

$B : G$
$2 : 5$
$(\times 4)$
$8 : 20$

$G : R$
$4 : 1$
$(\times 5)$
$20 : 5$ ✓

$8 + 20 + 5 = 33$
$3 \times 33 = 99$

$B : G : R$
$8 : 20 : 5$ ✓
$(\times 3)$
$24 : 60 : 15$

..........................15.......... ✓

(Total for Question   **is 3 marks)**

Let x be the reciprocal of 1.6

$x \times 1.6 = 1$
$(\div 1.6) \quad (\div 1.6)$
$x = 0.625$

0.625 ✓

Range of numbers which will
Round up to 9.8
$9.75 \leqslant x$
Round down to 9.8
$x < 9.85$

$9.75 \leqslant x < 9.85$ ✓

2. 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.

	Tom : Adam
Original	3 : 7
New	3 : 5

Total 240 stamps

Total 240 stamps

Seeing how many
Stamps Tom had
originally and
✓ after the Sale

Original → 3+7=10 $\frac{240}{10}$= 24   3 × 24 = 72 stamps

New → 3+5=8 $\frac{240}{8}$ = 30   3 × 30 = 90 stamps ①

getting how many
Stamps '1' in the
ratio is worth

90-72=18   ①

Finding how many
Stamps were sold

18

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

find $a:b:c$

$a:b = 2:5$ $b:c = 3:4$ ✓

$a:b:c$

To find b, LCM$(5,3) = 15$

$$a:b \qquad\qquad b:c$$

$$\times 3 \begin{pmatrix} 2:5 \\ 6:15 \end{pmatrix} \downarrow \times 3 \quad \times 5 \begin{pmatrix} 3:4 \\ 15:20 \end{pmatrix} \downarrow \times 5 \;✓$$

$6:15:20$ ✓

(Total for Question   is 3 marks)

4.   Adam, Linda and Rytis share an amount of money.

Linda gets three times as much money as Rytis gets. $\rightarrow L = 3R$
Linda gets half as much money as Adam gets. $\rightarrow L = \frac{1}{2}A$

What fraction of the amount of money does Linda get?

ler $R = 1$ $\rightarrow L = 3$ ratio $A : L : R$
                  $\rightarrow A = 6$ $6 : 3 : 1$ ✓

fraction for Linda $= \dfrac{3}{6+3+1} = \dfrac{3}{10}$

$3/10$ ✓²

(Total for Question   is 2 marks)