

## Questions

Q1.

There are some red counters and some yellow counters in a bag.

There are 30 yellow counters in the bag.

The ratio of the number of red counters to the number of yellow counters is 1:6

$$\begin{array}{l} \text{Red} : \text{Yellow} \\ 1 : 6 \end{array}$$

$$30 = 6 \text{ parts}$$

$$\frac{30}{6} = 5 = 1 \text{ part}$$

(a) Work out the number of red counters in the bag.

5

(2)

Riza puts some more red counters into the bag.

The ratio of the number of red counters to the number of yellow counters is now 1:2

(b) How many red counters does Riza put into the bag?

10

$$\begin{array}{l} \text{Red} : \text{Yellow} \\ 1 : 2 \end{array}$$

(2)

$$2 \text{ parts} = 30$$

$$1 \text{ part} = 15$$

$$15 - 5 = 10 \text{ extra}$$

(Total for question is 4 marks)

Q2.

On Saturday, some adults and some children were in a theatre.

The ratio of the number of adults to the number of children was 5 : 2

Each person had a seat in the Circle or had a seat in the Stalls.

$\frac{3}{4}$

of the children had seats in the Stalls.

117 children had seats in the Circle. =  $\frac{1}{4}$  of children

$$117 \times 4 = 468 \text{ children}$$

There are exactly 2600 seats in the theatre.

On this Saturday, were there people on more than 60% of the seats?

You must show how you get your answer.

$$\begin{array}{l} \text{Adults} : \text{Children} \\ 5 : 2 \end{array}$$

$$468 = 2 \text{ parts}$$

$$234 = 1 \text{ part}$$

$$234 \times 5 = 1170 \text{ Adults}$$

(Total for question = 5 marks)

People  $468 + 1170 = 1638$

$\frac{1638}{2600} \times 100 = 63\%$  so yes more than 60%

Q3.

The ratio of the number of boys to the number of girls in a school is 4:5  
There are 95 girls in the school.

B:G  
4:5

Work out the total number of students in the school.

76

95 = 5 parts

$\frac{95}{5} = 19 = 1 \text{ part}$

Boys  $4 \times 19 = 76$

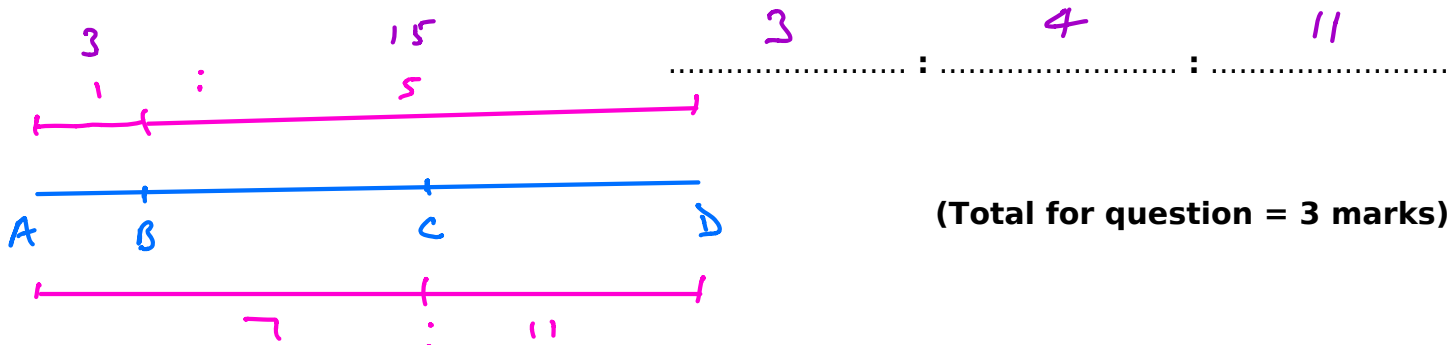
(Total for question = 3 marks)

Q4.

The points A, B, C and D lie in order on a straight line.

$AB : BD = 1 : 5$   
 $AC : CD = 7 : 11$

Work out  $AB : BC : CD$



(Total for question = 3 marks)

Q5.

Given that

$a : b = 8 : 5$  and  $b : c = 3 : 4$

find the ratio

$a : b : c$

Give your answer in its simplest form.

$a : b : c$

$8 : 5$   $\times 3$

$3 : 4$   $\times 5$

$24 : 15$   
 $15 : 20$

$24 : 15 : 20$

(Total for question = 3 marks)

Q6.

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 : R

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2 : 5  $\times 4$

4 : 1  $\times 5$

(Total for question = 3 marks)

8 : 20

20 : 5

8 : 20 : 5 = 33 parts

1 of 99 pens each part  $\frac{99}{33} = 3$

5 parts red so  $5 \times 3 = 15$  maximum red pens

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