Fractions and Ratio Worded Problems

Robbie and Gary share $675 in the ratio 5 : 4. Gary spends $\frac{5}{6}$ of his money on a new TV. How much does Gary's new TV cost?

$$R : G$$
$$\$375 : \$300$$
$$\frac{5}{6} \times \$300 = \underline{\$250}.$$

Three sisters Delia, Emma and Fajar share £880 in the ratio 2 : 5 : 4. Emma gives $\frac{2}{5}$ of her money to her mother, and Fajar gives $\frac{3}{8}$ of her money to her mother. How much money does their mother get in total?

$$D : E : F$$
$$£160 : £400 : £320$$
$$\frac{2}{5} \times 400 + \frac{3}{8} \times 320 = \underline{£280}.$$

In a year group there are 120 children. The ratio of boys to girls is 5 : 3. Of the boys, $\frac{2}{5}$ wear glasses. Of the girls, $\frac{2}{9}$ wear glasses. What percentage of the students in the year group wear glasses?

$$B : G$$
$$75 : 45$$
$$B : \frac{2}{5} \times 75 \qquad G : \frac{2}{9} \times 45 = 10$$
$$= 30$$
$$\frac{40}{120} \times 100 = \underline{33.\dot{3}\%}$$

In a cutlery drawer, knives, forks and spoons are in the ratio 6 : 5 : 3. There are 36 spoons in the drawer. Of the knives, 25% are dirty, and of the forks, $\frac{5}{12}$ are dirty. What fraction of all the cutlery is dirty?

$$K : F : S$$
$$72 : 60 : 36$$
$$25\% \times 72 = 18 \qquad \frac{43}{168}$$
$$\frac{5}{12} \times 60 = 25$$

There are 90 counters in a bag, either red or green or yellow. $\frac{1}{5}$ of the counters are yellow. The ratio of red counters to green counters is 7 : 5. Ten red counters are removed from the bag. Find the percentage of counters remaining in the bag that are red.

$$R : G : Y$$
$$42 : 30 : 18$$
$$-10 \text{ red}$$
$$32 : 30 : 18 \qquad \frac{32}{80} \times 100$$
$$= \underline{40\%}.$$