

PROBLEMS INVOLVING FRACTIONS

Note Title

11/10/2010

① John is paid weekly. Each week he spends $\frac{2}{5}$ of his wage on rent, and $\frac{3}{4}$ of his remaining money on food. He then has £39 left.

(a) What fraction of his pay does he spend on food?

$$\begin{aligned}\text{He spends } & \frac{3}{4} \text{ of } \frac{3}{5} \text{ of his pay on food} \\ & = \frac{3}{4} \times \frac{3}{5} \\ & = \underline{\underline{\frac{9}{20}}}\end{aligned}$$

(b) What fraction of his pay is left after rent and food?

$$\begin{aligned}\text{Food + rent} & = \frac{2}{5} + \frac{9}{20} \\ & = \frac{8}{20} + \frac{9}{20} \\ & = \frac{17}{20}\end{aligned}$$

$$\text{Left over} = 1 - \frac{17}{20} = \underline{\underline{\frac{3}{20}}}$$

(c) What is his pay for the week?

$$\text{let total pay} = x$$

$$\frac{3}{20} \text{ of } x = \text{£}39$$

Method 1

$$\frac{1}{20} \text{ of } x = \text{£}13$$

$$\begin{aligned}x & = 13 \times 20 \\ & = \underline{\underline{\text{£}260}}\end{aligned}$$

Method 2

$$\frac{3}{20} \times x = 39$$

$$\begin{aligned}x & = 39 \div \frac{3}{20} \\ & = 39 \times \frac{20}{3} \\ & = \underline{\underline{\text{£}260}}\end{aligned}$$

②

Work out

$$2\frac{1}{4} \div 1\frac{1}{5}$$

||

$$\frac{9}{4}$$

∴

$$\frac{5}{5}$$

||

$$\frac{3}{4} \times$$

x

$$\frac{5}{5}$$

||

$$\frac{5}{5}$$

2

$$\frac{1}{5}$$