Blue

1) True or false? Prove it!

a) $\frac{2}{8} + \frac{1}{4} + \frac{1}{16} = \frac{9}{16}$

b) $\frac{1}{2} + \frac{1}{6} + \frac{1}{12} = \frac{3}{12}$

c) $\frac{1}{3} + \frac{1}{6} + \frac{4}{12} = \frac{10}{12}$

d) $\frac{1}{6} + \frac{2}{12} + \frac{2}{3} = \frac{5}{21}$

If false, what mistakes do you think have been made?

Hassan is sorting his marbles.

$\frac{1}{3}$ are red.
$\frac{1}{6}$ are blue.
$\frac{5}{12}$ are yellow.
The rest are green.

What fraction of the marbles are green?

1) a) True

b) False. They have found a common denominator but not converted the numerators.
$\frac{1}{2} + \frac{1}{6} + \frac{1}{12} = \frac{9}{12}$

c) True

d) False. They have just added the denominators and the numerators, without finding a common denominator.
$\frac{1}{6} + \frac{2}{12} + \frac{2}{3} = \frac{12}{12}$

2) $\frac{1}{3}$ (or $\frac{4}{12}$) are red.

$\frac{1}{6}$ (or $\frac{2}{12}$) are blue.

$\frac{5}{12}$ are yellow.

$\frac{4}{12} + \frac{2}{12} + \frac{5}{12} = \frac{11}{12}$

$\frac{1}{12}$ of the marbles are green.