

a) Multiplying a fraction by a whole number:

What you write

Explanation

$$\begin{aligned} & \frac{3}{8} \times 5 \\ &= \frac{3}{8} \times \frac{5}{1} \\ &= \frac{15}{8} \\ &= 1\frac{7}{8} \end{aligned}$$

Make the whole number an improper fraction by writing it over 1

Multiply numerator by numerator
& denominator by denominator

Make an improper fraction into a mixed number

b) Multiplying a fraction by a fraction:

What you write

Explanation

$$\begin{aligned} & \frac{3}{4} \times \frac{4}{5} \\ &= \frac{12}{20} = \frac{3}{5} \end{aligned}$$

Multiply numerator by numerator
& denominator by denominator

Change the fraction into lowest terms
(or a mixed number)

c) Cancelling:

$$\begin{aligned} & \frac{8}{9} \times \frac{2}{5} \\ &= \frac{8}{15} \end{aligned}$$

BEFORE you multiply, see if you can divide a numerator and a denominator by the same number

e.g. 3 (numerator \div 3) = 1




9 (denominator \div 3) = 3

$$\frac{8 \times 1}{3 \times 5}$$

LEARN: 1) Make all the whole numbers into improper fractions

2) 'of' means multiply

3) Cancel in pairs - a numerator and a denominator

SO only cancel  or  **NEVER** 

4) Multiply - numerator x numerator
denominator x denominator

Finding a fraction of a numbere.g. a) Find $\frac{2}{3}$ of 18either $\frac{1}{3}$ is $18 \div 3 = 6$ $\frac{2}{3}$ is $6 \times 2 = 12$ or $\frac{2}{3}$ of 18 (Remember *of* means \times)

$$= \frac{2}{3} \times \frac{18}{1} \quad (\text{Cancel by 3})$$

$$= \frac{12}{1} = 12 \quad \frac{2 \times 6}{1 \times 1}$$

b) Find $\frac{3}{7}$ of 273 *When the numbers are large, show the sums if you wish* $\frac{1}{7}$ is $273 \div 7 = 39$ $\frac{3}{7}$ is $39 \times 3 = \underline{117}$

$$\begin{array}{r} 7 \overline{) 273} \\ \underline{21} \\ 39 \\ \underline{39} \\ 0 \end{array} \quad \begin{array}{r} 39 \\ \times 3 \\ \hline 117 \end{array}$$

Finding the whole numbere.g. a) $\frac{1}{3}$ of a number is 7

| | | |
|---|--|--|
| 7 | | |
|---|--|--|

so $\frac{3}{3}$ is $7 \times 3 = \underline{21}$

| | | |
|---|---|---|
| 7 | 7 | 7 |
|---|---|---|

b) $\frac{2}{3}$ is 14

| | | |
|---|---|--|
| 7 | 7 | |
|---|---|--|

so $\frac{1}{3}$ is $14 \div 2 = 7$

| | | |
|---|--|--|
| 7 | | |
|---|--|--|

so $\frac{3}{3}$ is $7 \times 3 = \underline{21}$

| | | |
|---|---|---|
| 7 | 7 | 7 |
|---|---|---|

Expressing one number as a fraction of another:

e.g. i) I got 11 out of 16 spellings correct. What fraction was correct?

Ans: $\frac{11}{16}$ ii) What fraction **of 20** is 15? Ans: $\frac{15}{20} = \frac{3}{4}$ Remember : $\frac{\text{is}}{\text{of}}$ i.e.. the 'whole amount' is always the denominator.