

# FRACTIONS

A FRACTION MEANS DIVISION

$$\frac{2}{3} \Rightarrow 2 \div 3$$

## Finding a Fraction

$$\frac{1}{2} \text{ of } 16 \Rightarrow 16 \div 2 = 8$$

$$\frac{1}{3} \text{ of } 21 \Rightarrow 21 \div 3 = 7$$

for more complicated fractions

$$\frac{2}{3} \text{ of } 15 \Rightarrow \text{1st find } \frac{1}{3} \text{ of } 15 = 5$$

then because you want  $\frac{2}{3}$  multiply  
 $5 \times 2 = 10$

$$\frac{3}{4} \text{ of } 20 \Rightarrow \frac{1}{4} = 5$$
$$5 \times 3 = 15 \quad \therefore \frac{3}{4} \text{ of } 20 = 15$$

Find  $\frac{1}{3}$  of 21 =

$\frac{1}{7}$  of 28 =

$\frac{1}{5}$  of 40 =

$\frac{3}{5}$  of 20 =

$\frac{5}{6}$  of 30 =

$\frac{3}{4}$  of 44 =

## SIMILAR FRACTIONS

OR EQUIVALENT FRACTIONS

fractions that look the same but are different

$$\textcircled{1} \frac{1}{2} \Rightarrow \textcircled{2} \frac{2}{4}$$

$$\frac{1}{3} = \frac{2}{6}$$

$$\frac{2}{5} = \frac{6}{15}$$

$$\frac{1}{2} = \frac{2}{4}$$

$$\frac{3}{4} = \frac{15}{20}$$

Find  $\frac{1}{2} = \frac{\quad}{8}$

$\frac{1}{3} = \frac{\quad}{12}$

$\frac{2}{3} = \frac{20}{\quad}$

$\frac{3}{5} = \frac{18}{\quad}$

# Simplifying Fractions

Canceling down into a simpler form

**REMEMBER**

DO THE SAME TO THE TOP AS YOU DO TO THE BOTTOM

$$\frac{4}{10} \xrightarrow{\div 2} \frac{2}{5}$$

$$\frac{15}{20} \xrightarrow{\div 5} \frac{3}{4}$$

$$\frac{33}{39} \xrightarrow{\div 3} \frac{11}{13}$$

## Adding & Subtracting Fractions

In order to add & subtract fractions HAVE to have the **SAME DENOMINATOR**

$$\frac{1}{3} + \frac{1}{3} = \frac{2}{3} \quad \text{Simply just add the top}$$

$$\frac{4}{5} - \frac{1}{5} = \frac{3}{5} \quad \text{Simply subtract the top}$$

When the denominator isn't the same need to find the **LOWEST COMMON DENOMINATOR**

$$\frac{2}{3} + \frac{1}{4} = \frac{\quad}{12} + \frac{\quad}{12}$$

usually best to x denominators together  
ie  $3 \times 4 = 12$

Now need to get equivalent fractions

$$\frac{2}{3} \xrightarrow{\times 4} \frac{8}{12} \quad \frac{1}{4} \xrightarrow{\times 3} \frac{3}{12} = \frac{11}{12}$$

x 2 by 4 as well

A few examples

$$\frac{3}{4} + \frac{2}{5} \Rightarrow \frac{15}{20} + \frac{8}{20} \Rightarrow \frac{23}{20} \Rightarrow 1 \frac{3}{20}$$

$$\frac{5}{6} - \frac{1}{7} \Rightarrow \frac{35}{42} - \frac{6}{42} \Rightarrow \frac{29}{42}$$

# FRACTIONS

IMPROPER FRACTION  $\rightarrow$  MIXED NUMBER

when numerator is bigger than denominator

whole number and a fraction

$$4/3 \rightarrow 4 \div 3 \rightarrow 1 \text{ remainder } 1 \rightarrow 1\frac{1}{3}$$

$$7/4 \rightarrow 7 \div 4 \rightarrow 1 \text{ remainder } 3 \rightarrow 1\frac{3}{4}$$

MIXED NUMBER  $\rightarrow$  IMPROPER FRACTION

$$1\frac{1}{2} \rightarrow \text{equivalent to } 2\frac{1}{2} + \frac{1}{2} = 3\frac{1}{2}$$

to work out

$$2\frac{3}{4} \rightarrow 2\frac{3}{4} \begin{matrix} + \\ \times \end{matrix} \begin{matrix} 1 \\ 4 \end{matrix} \rightarrow 11\frac{1}{4}$$

1st times  
 $2 \times 4 = 8$   
then add 3 = 11

## MULTIPLYING FRACTIONS

Multiply the top & multiply the bottom

$$\frac{1}{2} \times \frac{2}{5} \rightarrow \frac{2}{10} \text{ [don't forget to cancel down]} \rightarrow \frac{1}{5}$$

$$\frac{3}{8} \times \frac{5}{6} \rightarrow \frac{15}{48} \rightarrow \frac{5}{16}$$

## DIVIDING FRACTIONS

Similar to multiplying BUT first swap the 2nd fraction round

$$\frac{1}{2} \div \frac{2}{3} \Rightarrow \frac{1}{2} \times \frac{3}{2} = \frac{3}{4}$$

$$\frac{3}{4} \div \frac{6}{7} \Rightarrow \frac{3}{4} \times \frac{7}{6} = \frac{21}{24} = \frac{7}{8}$$