

## CONVERTING BETWEEN DECIMALS AND FRACTIONS

### Decimals to Fractions

#### Examples

$$\textcircled{1} \quad 0.7 = \frac{7}{10}$$

$$\textcircled{2} \quad 0.06 = \frac{6}{100} = \frac{3}{50}$$

$$\textcircled{3} \quad 0.35 = \frac{35}{100} = \frac{7}{20}$$

$$\textcircled{4} \quad 0.016 = \frac{16}{1000} = \frac{4}{250} = \frac{2}{125}$$

### Fractions to Decimals

If we can see how to make the denominator into 10, 100, 1000 etc, we can do that:

$$\textcircled{1} \quad \frac{3}{20} \xrightarrow{\times 5} = \frac{15}{100} = 0.15$$

$$\textcircled{2} \quad \frac{7}{250} \xrightarrow{\times 4} = \frac{28}{1000} = 0.028$$

If we can't do the above, we need to divide the top by the bottom:—

$$\textcircled{3} \quad \frac{5}{8} \quad \begin{array}{r} 0.625 \\ 8 \overline{) 5.000} \\ \underline{40} \phantom{00} \\ 60 \phantom{0} \\ \underline{56} \phantom{0} \\ 40 \\ \underline{40} \\ 0 \end{array} = 0.625$$

Some fractions terminate when turned into decimals  
but some recur.

$$\textcircled{4} \quad \frac{3}{7} \quad \begin{array}{r} 0.4285714 \dots \\ 7 \overline{) 3.0000000} \\ \underline{28} \phantom{000000} \\ 20 \phantom{00000} \\ \underline{14} \phantom{00000} \\ 60 \phantom{0000} \\ \underline{56} \phantom{0000} \\ 40 \phantom{000} \\ \underline{35} \phantom{000} \\ 50 \phantom{00} \\ \underline{49} \phantom{00} \\ 10 \phantom{0} \\ \underline{7} \phantom{0} \\ 30 \\ \underline{28} \\ 20 \\ \underline{14} \\ 60 \\ \underline{56} \\ 40 \\ \underline{35} \\ 50 \\ \underline{49} \\ 10 \\ \underline{7} \\ 30 \\ \underline{28} \\ 20 \\ \underline{14} \\ 60 \\ \underline{56} \\ 40 \\ \underline{35} \\ 50 \\ \underline{49} \\ 10 \\ \underline{7} \\ 30 \end{array}$$

$$= 0.\overline{428571} \quad \text{or} \quad 0.\dot{4}2857\dot{1}$$