

## Operations With Decimals

### Fractions to Decimals (use long division)

$\frac{356}{21} \rightarrow$

Divisor: 21, Quotient: 16.952, Dividend: 356.000000

The decimals line up  
Keep adding zeros

begins repeating

$$\begin{array}{r} 16.95238095 \\ 21 \overline{) 356.00000000} \\ \underline{42} \phantom{00000000} \\ 146 \phantom{00000000} \\ \underline{126} \phantom{00000000} \\ 200 \phantom{00000000} \\ \underline{189} \phantom{00000000} \\ 110 \phantom{00000000} \\ \underline{105} \phantom{00000000} \\ 50 \phantom{00000000} \\ \underline{42} \phantom{00000000} \\ 80 \phantom{00000000} \end{array}$$

So to change  $\frac{1}{4}$  into a decimal number, divide 1 by 4

$$\begin{array}{r} .25 \\ 4 \overline{) 1.00} \\ \underline{8} \phantom{00} \\ 20 \\ \underline{20} \\ 0 \end{array}$$

To divide by a decimal, move the decimal in the divisor to the right of the number. Move the decimal in the dividend to the right the same number of digits as the divisor.

$$\begin{array}{r} 1.5 \overline{) 9.0} \Rightarrow 15 \overline{) 90.0} \\ \underline{90} \\ 0 \end{array}$$

To change a decimal number into a fraction:

(Remember the value of the numbers after the decimal:  
.1 = tenths, .01 = hundredths, .001 = thousandths, etc.)

So if you have one number after the decimal, write it over ten.

$$0.2 = \frac{2}{10} = \frac{1}{5} \text{ reduced}$$

If you have two numbers after the decimal, write it over one hundred.

$$0.25 = \frac{25}{100} = \frac{1}{4} \text{ reduced}$$

To change a decimal to a percent, multiply the decimal by 100  
or "move the decimal point 2 places to the right."

$$.25(100) = 25.00\% \quad \text{or } .25 = 25\%$$

## Rounding

Round 907.45 to the nearest tens place

Hundreds Tens Ones tenths hundredths thousandths  
9 0 7 . 4 5 7



↑  
round up

910

Round 907.457 to the nearest integer

↑  
round down  
907

Round 907.457 to the nearest tenths place

↑  
round up  
907.5