Name: _____ Date: _____

Learning Goal 3.1	I can convert between percentages, decimal and fractions.

Example Determine the following percentages.

a. 5 out of 25.

$\frac{5}{25} \times \frac{4}{4} = \frac{20}{100}$

$= 20\%$

b. 13 out of 2080.

$\frac{13}{2080} = \frac{0.00625}{1} \times 100 \times 100$

$= \frac{0.625}{100} = 0.625\%$

c. 18 out of 12.

$\frac{18}{12} = 1\frac{6}{12} = 1.5$

$= 150\%$

Example In January, Arnold weighed 160 pounds. He began an intensive weight training regiment and in 14 months his weight had increased to 210 pounds. What percent of his **current weight** is his original weight?

$\frac{\text{original}}{\text{current}} = \frac{160}{210}$

$\doteq 0.762$

$= 76.2\%$

His original weight is 76.2% of his current weight.

Example A forester recorded the following data on tree types.

Tree Species	Number of Trees
Fir	567
Pine	324
Larch	156
Cedar	89
Hemlock	678

a. What is the total number of trees recorded?

1814 trees

b. What percent of the total does each tree species represent?

Fir: $\frac{567}{1814} \doteq 0.313 = 31.3\%$

Pine: $\frac{324}{1814} \doteq 0.179 = 17.9\%$

Larch: $\frac{156}{1814} \doteq 0.086 = 8.6\%$

Cedar: $\frac{89}{1814} \doteq 0.049 = 4.9\%$

Hemlock: $\frac{678}{1814} \doteq 0.374 = 37.4\%$

$31.3 + 17.9 + 8.6 + 4.9 + 37.4$

$= 100.1$

Assignment p. 135 #14, 16, 19, 20 Quiz Next Day!

Example For the past century, the north magnetic pole has been drifting across the Canadian Arctic. Prior to the 1970s, the magnetic pole was drifting at an average speed of 10 km/year. Since the 1970s, the speed at which the magnetic pole has been drifting has increased to about 50 km/year. The circumference of the earth is approximately $40\,000$ km.

a. What percent is the current speed of the original speed.
b. If the pole drifts at a rate of 50 km/year, what percent of the earth's circumference will the pole drift in three years?

a. $\frac{50}{10} = 5.$ The current speed is 500% of the original.
$= 500\%$

b. $50\frac{\text{km}}{\text{year}} \times 3 \text{ years} = 150 \text{ km}$

$\frac{150}{40\,000} = 0.00375$
$= 0.375\%$