

Percentages

Converting a decimal to a percent		Converting a percent to a decimal	
<p>0.375</p> <p>$0.375 \times 100 = 37.5\%$</p> <p>Multiply the decimal by 100 (just move decimal point two places to right) and add % symbol</p>	<p>25%</p> <p>$25 \div 100 = 0.25$</p> <p>Divide the decimal by 100 (just move decimal point two places to the left), add 0's if necessary</p> <p><i>Remember we assume that there is a decimal point to the right of any whole number</i></p>		
Convert Fraction to percent		Convert a percent to a fraction	
<p>$\frac{3}{4}$</p> <p>$\frac{3}{4} = 0.75$</p> <p>75%</p> <p>Convert fraction to a decimal by dividing</p> <p>Convert decimal to percent as example above</p>	<p>12.5%</p> <p>$\frac{12.5}{100}$</p> <p>12.5 → 125</p> <p>100 → 1000</p> <p>$\frac{125}{1000} = \frac{1}{8}$</p> <p>Drop the % symbol and write the number over 100</p> <p>Convert numerator to whole number by moving decimal point to right</p> <p>Add zeros to the denominator equal to number of places decimal point was moved above</p> <p>Simplify fraction</p>		
Example 1	Example 2	Example 3	% Increase/Decrease
<p>What is 45% of 200?</p> <p>$x = 45\%$ of 200</p> <p>$x = 0.45 \times 200$</p> <p>= 90</p>	<p>90 is 45% of what number?</p> <p>$90 = 45\%$ of x</p> <p>$90 = 0.45x$</p> <p>$x = 90 \div 0.45$</p> <p>= 200</p>	<p>90 is what percent of 200?</p> <p>$90 = x\%$ of 200</p> <p>$90 = \frac{x}{100}(200)$</p> <p>$90 = \frac{200}{100}x$</p> <p>$90 = 2x$</p> <p>$x = 45$</p>	<p>To increase a number by $k\%$, multiply it by $(1 + k\%)$.</p> <p>To decrease a number by $k\%$, multiply it by $(1 - k\%)$</p>

Example 4	Example 5	Example 6	Example 7
What is the value of a \$1600 investment after a 25% increase?	What is the value of a \$2000 investment if it loses 25%?	If 25 students took an exam and 4 of them failed, what percent of them passed?	What is 10% of 20% of 30%?
$\$1600(1 + 25\%)$	$\$2000(1 - 25\%)$	$25 - 4 = 21$ passed	$0.10 \times 0.20 \times 0.30$
$\$1600(1 + 0.25)$	$\$2000(1 - 0.25)$	$21 \div 25 = 0.84$	$= .006 = 0.6\%$
$\$1600(1.25) = \2000	$\$2000(0.75) = \1500	$0.84 = 84\%$ passed	