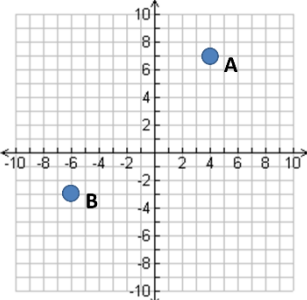
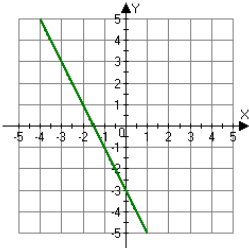
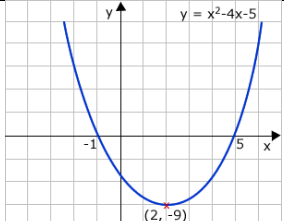
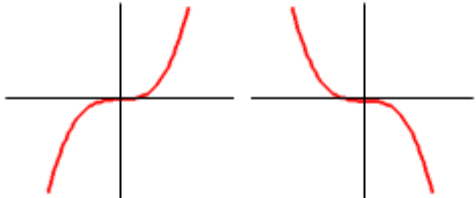
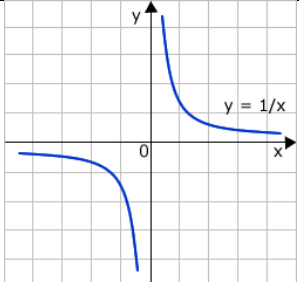
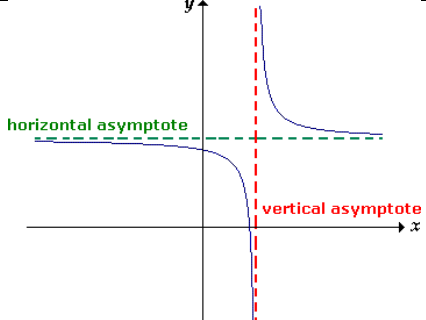
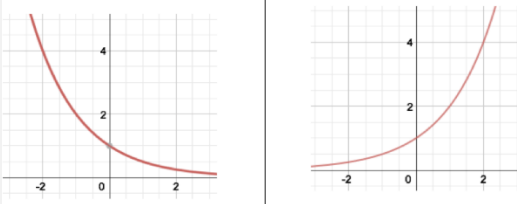
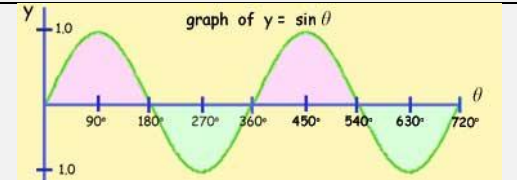
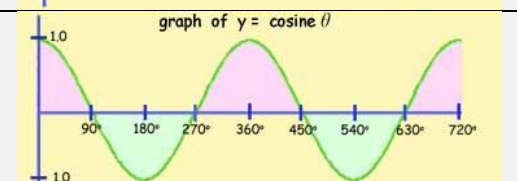
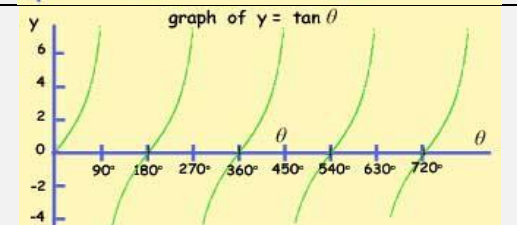
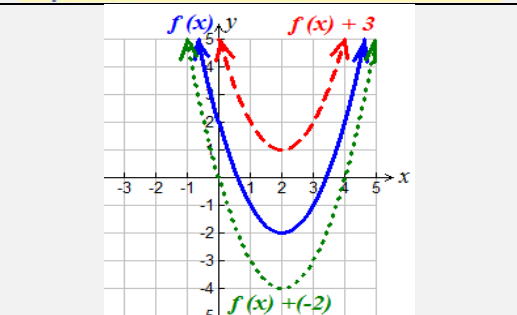
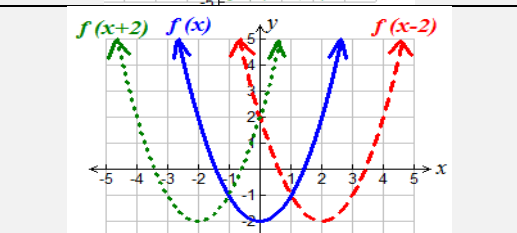
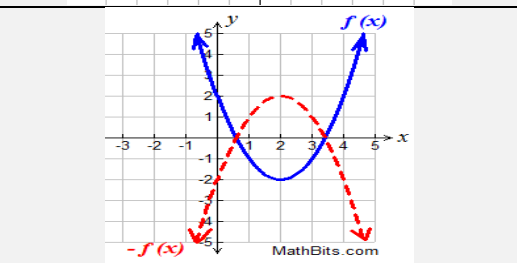


Topic/Skill	Definition/Tips	Example
1. Coordinates	Written in <b>pairs</b> . The <b>first</b> term is the <b>x-coordinate</b> (movement <b>across</b> ). The <b>second</b> term is the <b>y-coordinate</b> (movement <b>up or down</b> )	 <p>A: (4,7) B: (-6,-3)</p>
2. Linear Graph	<b>Straight line</b> graph. The <b>equation</b> of a linear graph can contain an <b>x-term</b> , a <b>y-term</b> and a <b>number</b> .	<p>Example:</p>  <p>Other examples:  <math>x = y</math>  <math>y = 4</math>  <math>x = -2</math>  <math>y = 2x - 7</math>  <math>y + x = 10</math>  <math>2y - 4x = 12</math></p>
3. Quadratic Graph	A ' <b>U-shaped</b> ' curve called a <b>parabola</b> . The equation is of the form $y = ax^2 + bx + c$ , where $a, b$ and $c$ are numbers, $a \neq 0$ . If $a < 0$ , the parabola is <b>upside down</b> .	 <p><math>y = x^2 - 4x - 5</math></p>
4. Cubic Graph	The equation is of the form $y = ax^3 + k$ , where $k$ is an <b>number</b> . If $a > 0$ , the curve is <b>increasing</b> . If $a < 0$ , the curve is <b>decreasing</b> .	<p><math>a &gt; 0</math>      <math>a &lt; 0</math></p> 
5. Reciprocal Graph	The equation is of the form $y = \frac{A}{x}$ , where $A$ is a <b>number</b> and $x \neq 0$ . The graph has <b>asymptotes</b> on the <b>x-axis</b> and <b>y-axis</b> .	 <p><math>y = \frac{1}{x}</math></p>
6. Asymptote	A <b>straight line</b> that a graph <b>approaches</b> but <b>never touches</b> .	 <p>horizontal asymptote vertical asymptote</p>

7. Exponential Graph	<p>The equation is of the form <math>y = a^x</math>, where <math>a</math> is a number called the <b>base</b>.</p> <p>If <math>a &gt; 1</math> the graph <b>increases</b>.</p> <p>If <math>0 &lt; a &lt; 1</math>, the graph <b>decreases</b>.</p> <p>The graph has an <b>asymptote</b> which is the <b>x-axis</b>.</p>	
8. $y = \sin x$	<p>Key Coordinates:  <math>(0, 0)</math>, <math>(90, 1)</math>, <math>(180, 0)</math>, <math>(270, -1)</math>, <math>(360, 0)</math></p> <p><math>y</math> is never more than 1 or less than -1.          Pattern repeats every <math>360^\circ</math>.</p>	
9. $y = \cos x$	<p>Key Coordinates:  <math>(0, 1)</math>, <math>(90, 0)</math>, <math>(180, -1)</math>, <math>(270, 0)</math>, <math>(360, 1)</math></p> <p><math>y</math> is never more than 1 or less than -1.          Pattern repeats every <math>360^\circ</math>.</p>	
10. $y = \tan x$	<p>Key Coordinates:  <math>(0, 0)</math>, <math>(45, 1)</math>, <math>(135, -1)</math>, <math>(180, 0)</math>,  <math>(225, 1)</math>, <math>(315, -1)</math>, <math>(360, 0)</math></p> <p><b>Asymptotes at <math>x = 90</math> and <math>x = 270</math></b>          Pattern repeats every <math>360^\circ</math>.</p>	
11. $f(x) + a$	<p><b>Vertical translation up</b> a units. <math>\begin{pmatrix} 0 \\ a \end{pmatrix}</math></p>	
12. $f(x + a)$	<p><b>Horizontal translation left</b> a units. <math>\begin{pmatrix} -a \\ 0 \end{pmatrix}</math></p>	
13. $-f(x)$	<p><b>Reflection over the x-axis.</b></p>	
14. $f(-x)$	<p><b>Reflection over the y-axis.</b></p>	