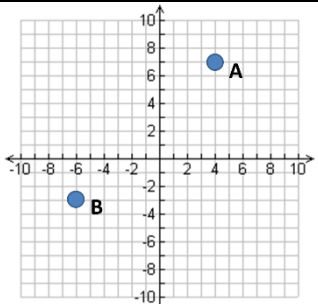
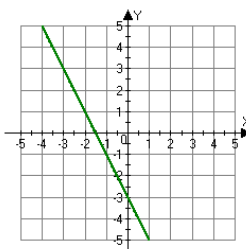
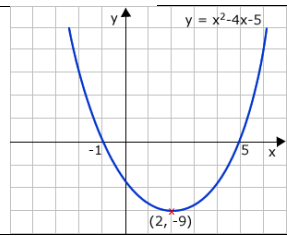
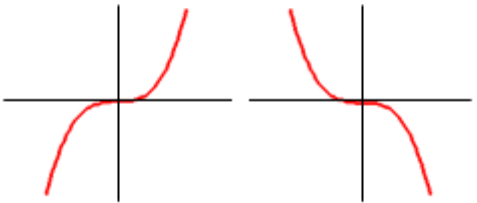
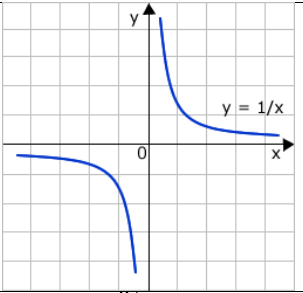
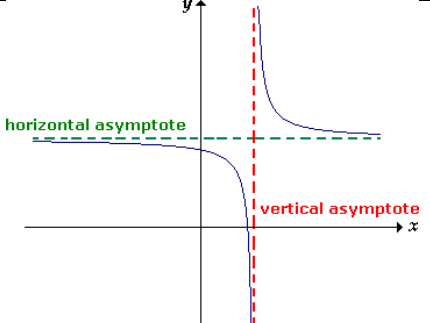
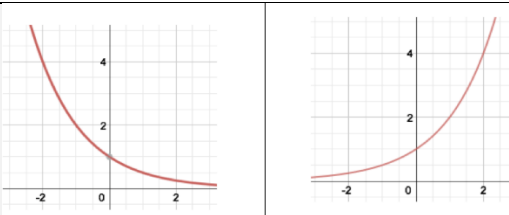
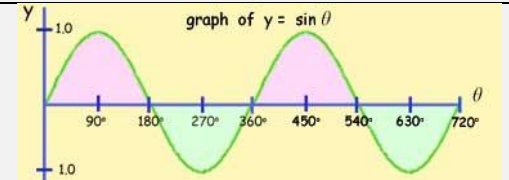
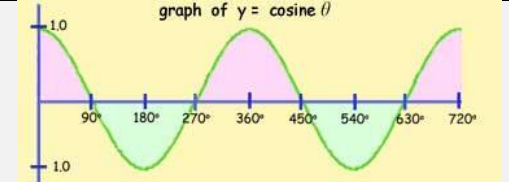
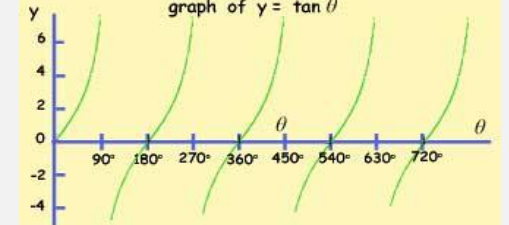
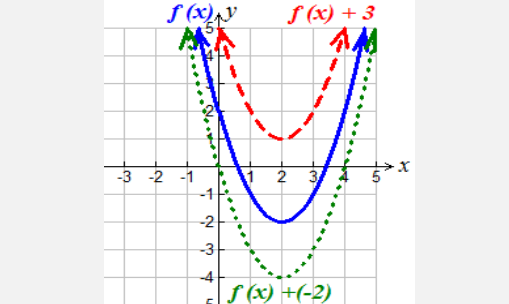
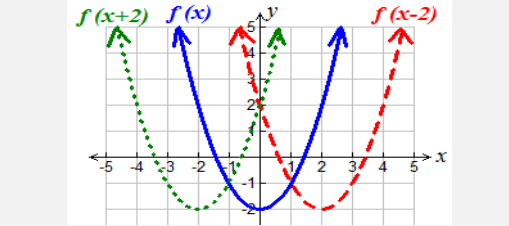
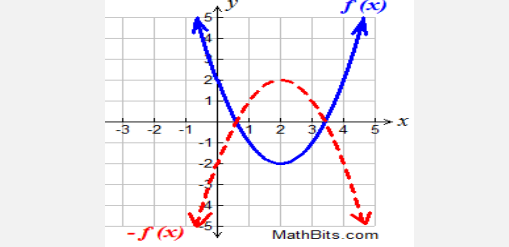
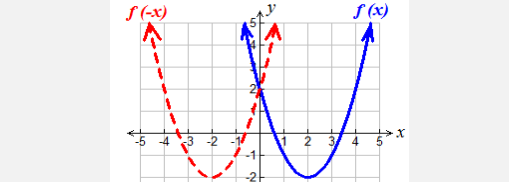


| Topic/Skill | Definition/Tips | Example |
|---------------------|--|--|
| 1. Coordinates | Written in pairs . The first term is the x-coordinate (movement across). The second term is the y-coordinate (movement up or down) |  <p>A: (4,7) B: (-6,-3)</p> |
| 2. Linear Graph | Straight line graph. The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

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

