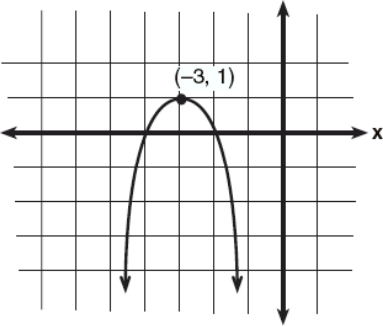
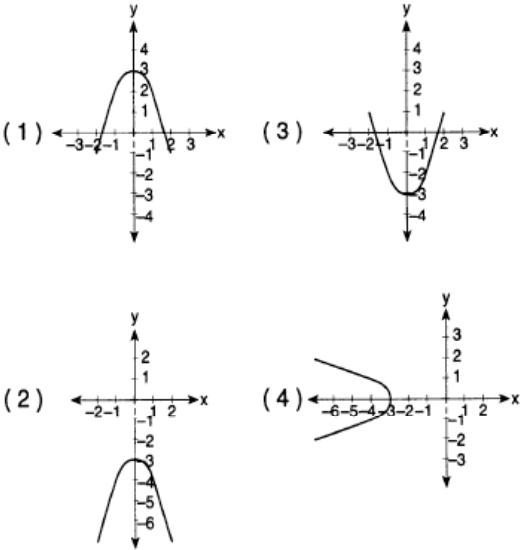


<p>1. What is the equation of a parabola that goes through points <math>(0, 1)</math>, <math>(-1, 6)</math>, and <math>(2,3)</math>?</p> <p>(1) <math>y = x^2 + 1</math>            (2) <math>y = 2x^2 + 1</math>            (3) <math>y = x^2 - 3x + 1</math>            (4) <math>y = 2x^2 - 3x + 1</math></p>	<p>2. Find the solution set of <math>x^2 - 3x - 28 \geq 0</math>.</p>
<p>3. Which equation represents the parabola shown in the accompanying graph?</p>  <p>(1) <math>f(x) = (x+1)^2 - 3</math>            (2) <math>f(x) = -(x-3)^2 + 1</math>            (3) <math>f(x) = -(x+3)^2 + 1</math>            (4) <math>f(x) = -(x-3)^2 - 3</math></p>	<p>4. Which graph represents the equation <math>y = x^2 - 3</math>?</p> 
<p>5. What is the y-intercept of the graph of the parabola whose equation is <math>y = x^2 - 2x - 8</math>?</p>	<p>6. Find the multiplicative inverse of the complex number <math>5 - 9i</math> and express it in <math>a + bi</math> form.</p>
<p>7. Combine and express in simplest form:</p> $\frac{y-20}{y^2-16} + \frac{2}{y-4}$	<p>8. If <math>f(x) = \frac{3}{x}</math> and <math>g(x) = 3x^2 + 6x + 3</math>, then find all values of <math>x</math> satisfying the equation <math>(f \circ g)(x) = \frac{1}{9}</math>.</p>

9. State whether this relation is a function. Explain your answer.

$\left\{ \begin{array}{l} (\text{Jan}, 31), (\text{Feb}, 28), (\text{Feb}, 29), (\text{Mar}, 31), (\text{Apr}, 30), \\ (\text{May}, 31), (\text{Jun}, 30), (\text{Jul}, 31), (\text{Aug}, 31), (\text{Sep}, 30), \\ (\text{Oct}, 31), (\text{Nov}, 30), (\text{Dec}, 31) \end{array} \right\}$

10. For the equation  $y = 2x - 10x^2 + 15$ , state the sum of the roots and the product of the roots.

11. Solve the equation  $x^2 - 6x - 2 = 0$  and express the roots in simplest  $a + bi$  form.

12. For each function, express  $\frac{f(x+h) - f(x)}{h}$  in simplest form where  $h \neq 0$ :

a)  $f(x) = x^2$

b)  $f(x) = \frac{1}{x}$

c)  $f(x) = 5$

13. Solve:  $\sqrt{x+4} + \sqrt{1-x} = 3$