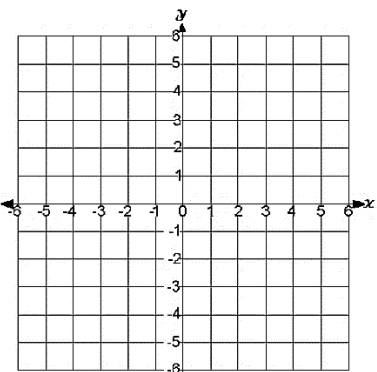
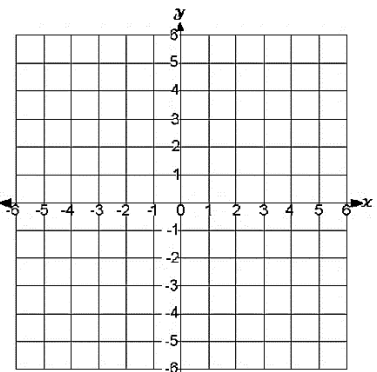


Name: \_\_\_\_\_

Block: \_\_\_\_\_

<p>1. Factor the expression <math>16a^2 - 81</math></p>	<p>2. Factor the expression <math>12x^2 + 14x - 6</math></p>	<p>3. Find the roots/x-intercepts/zeros <math>x^2 - 7x + 12 = 0</math></p>
<p>4. Solve the equation by factoring. <math>x^2 - 10x + 25 = 0</math></p>	<p>5. Solve the equation by completing the square. <math>x^2 - 8x + 7 = 0</math></p>	<p>6. Solve the equation using the quadratic formula. <math>4x^2 - 7x + 3 = 0</math></p>
<p>7. Write quadratic in vertex form. <math>f(x) = 2x^2 + 12x + 1</math></p>	<p>8. The function <math>h(t) = -t^2 + 8t + 2</math> represents the height, in feet, of a stream of water being squirted out of a fountain after <math>t</math> seconds. What is the maximum height of the water</p>	<p>9. What are the zeros of the function represented by the quadratic expression? <math>x^2 + 6x - 27</math></p>
<p>10. What are the zeros of the function represented by the quadratic expression? <math>2x^2 - 5x - 3</math></p>	<p>11. The product of two consecutive positive integers is 132.  a. Write an equation to model the situation.  b. What are the two consecutive integers?</p>	<p>12. The formula for the volume of a cylinder is <math>V = \pi r^2 h</math>. Solve for <math>r</math>.</p>
<p>13. Graph the function represented by the equation <math>y = 3(x - 1)^2 - 2</math></p> 	<p>14. Graph the function <math>f(x) = x^2 + 2x - 3</math></p> 	<p>Domain:  Range:  x-intercept:  y-intercept:  Increasing:  Decreasing:</p>

<p>1. Which expression is equivalent to <math>121x^2 - 64y^2</math>?</p> <p>A . <math>(11x - 16y)(11x + 16y)</math> B . <math>(11x - 16y)(11x - 16y)</math> C . <math>(11x + 8y)(11x + 8y)</math> D . <math>(11x + 8y)(11x - 8y)</math></p>	1. _____
<p>2. What is a common factor for the expression <math>24x^2 + 16x + 144</math>?</p> <p>A . 16 B . <math>8x</math> C . <math>3x^2 + 2x + 18</math> D . <math>8(x - 2)(3x^2 + 9)</math></p>	2. _____
<p>3. What are the zeros of the function represented by the quadratic expression <math>2x^2 + x - 3</math>?</p> <p>A . <math>x = -3\sqrt{2}</math> and <math>x = 1</math> B . <math>x = -2\sqrt{3}</math> and <math>x = 1</math> C . <math>x = -1</math> and <math>x = \frac{2}{3}</math> D . <math>x = -1</math> and <math>x = -\frac{3}{2}</math></p>	3. _____
<p>4. What is the vertex of the graph of <math>f(x) = x^2 + 10x - 9</math>?</p> <p>A . (5, 66) B . (5, -9) C . (-5, -9) D . (-5, -34)</p>	4. _____
<p>5. Which of these is the result of completing the square for the expression <math>x^2 + 8x - 30</math>?</p> <p>A . <math>(x + 4)^2 - 30</math> B . <math>(x + 4)^2 - 46</math> C . <math>(x + 8)^2 - 30</math> D . <math>(x + 8)^2 - 94</math></p>	5. _____
<p>6. The expression <math>-x^2 + 70x - 600</math> represents a company's profit for selling <math>x</math> items . For which number(s) of items sold is the company's profit equal to \$0?</p> <p>A . 0 items B . 35 items C . 10 items and 60 items D . 20 items and 30 item</p>	6. _____
<p>7. The formula for the area of a circle is <math>A = \pi r^2</math> . Which equation shows the formula in terms of <math>r</math>?</p> <p>A . <math>r = \frac{2A}{\pi}</math> B . <math>r = \frac{\sqrt{A}}{\pi}</math> C . <math>r = \sqrt{\frac{A}{\pi}}</math> D . <math>r = \frac{A}{2\pi}</math></p>	7. _____

<p>8. What are the solutions to the equation <math>2x^2 - 2x - 12 = 0</math>?</p> <p>A . <math>x = -4, x = 3</math>  B . <math>x = -3, x = 4</math>  C . <math>x = -2, x = 3</math>  D . <math>x = -6, x = 2</math></p>	<p>8. _____</p>
<p>9. What are the solutions to the equation <math>6x^2 - x - 40 = 0</math> ?</p> <p>A . <math>x = -\frac{8}{3}, x = -\frac{5}{2}</math>  B . <math>x = -\frac{8}{3}, x = \frac{5}{2}</math>  C . <math>x = \frac{5}{2}, x = \frac{8}{3}</math>  D . <math>x = -\frac{5}{2}, x = \frac{8}{3}</math></p>	<p>9. _____</p>
<p>10. What are the solutions to the equation <math>x^2 - 5x = 14</math>?</p> <p>A . <math>x = -7, x = -2</math>  B . <math>x = -14, x = -1</math>  C . <math>x = -2, x = 7</math>  D . <math>x = -1, x = 14</math></p>	<p>10. _____</p>
<p>11. An object is thrown in the air with an initial velocity of 5 m/s from a height of 9 m . The equation <math>h(t) = -4.9t^2 + 5t + 9</math> models the height of the object in meters after t seconds . About how many seconds does it take for the object to hit the ground? Round your answer to the nearest tenth of a second.</p> <p>A . 0.940 second  B . 1.50 seconds  C . 2.00 seconds  D . 9.00 seconds</p>	<p>11. _____</p>
<p>12. A café's annual income depends on x, the number of customers . The function <math>I(x) = 4x^2 - 20x</math> describes the café's total annual income . The function <math>C(x) = 2x^2 + 5</math> describes the total amount the café spends in a year . The café's annual profit, P(x), is the difference between the annual income and the amount spent in a year . Which function describes P(x)?</p> <p>A . <math>P(x) = 2x^2 - 20x - 5</math>  B . <math>P(x) = 4x^3 - 20x^2</math>  C . <math>P(x) = 6x^2 - 20x + 5</math>  D . <math>P(x) = 8x^4 - 40x^3 - 20x^2 - 100x</math></p>	<p>12. _____</p>

13. Use this table to answer the question .

What is the average rate of change of  $f(x)$  over the interval  $-2 \leq f(x) \leq 0$ ?

- A . -10
- B . -5
- C . 5
- D . 10

$x$	$f(x)$
-2	15
-1	9
0	5
1	3
2	3

13. \_\_\_\_\_

14. What is the end behavior of the graph of  $f(x) = -0.25x^2 - 2x + 1$ ?

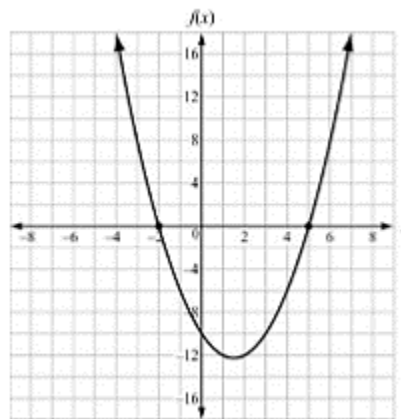
- A . As  $x$  increases,  $f(x)$  increases. As  $x$  decreases,  $f(x)$  decreases.
- B . As  $x$  increases,  $f(x)$  decreases. As  $x$  decreases,  $f(x)$  decreases.
- C . As  $x$  increases,  $f(x)$  increases. As  $x$  decreases,  $f(x)$  increases.
- D . As  $x$  increases,  $f(x)$  decreases. As  $x$  decreases,  $f(x)$  increases.

14. \_\_\_\_\_

15. Use this graph to answer the question .

Which function is shown in the graph?

- A .  $f(x) = x^2 - 3x - 10$
- B .  $f(x) = x^2 + 3x - 10$
- C .  $f(x) = x^2 + x - 12$
- D .  $f(x) = x^2 - 5x - 8$



15. \_\_\_\_\_

16. The function  $f(t) = -16t^2 + 64t + 5$  models the height of a ball that was hit into the air, where  $t$  is measured in seconds and  $h$  is the height in feet . This table represents the height,  $g(t)$ , of a second ball that was thrown into the air .

Time, $t$ (In seconds)	Height, $g(t)$ (In feet)
0	4
1	36
2	36
3	4

Which statement BEST compares the length of time each ball is in the air?

- A . The ball represented by  $f(t)$  is in the air for about 5 seconds, and the ball represented by  $g(t)$  is in the air for about 3 seconds.
- B . The ball represented by  $f(t)$  is in the air for about 3 seconds, and the ball represented by  $g(t)$  is in the air for about 5 seconds.
- C . The ball represented by  $f(t)$  is in the air for about 3 seconds, and the ball represented by  $g(t)$  is in the air for about 4 seconds.
- D . The ball represented by  $f(t)$  is in the air for about 4 seconds, and the ball represented by  $g(t)$  is in the air for about 3 seconds.

16. \_\_\_\_\_