

## 3.REV.2 – QUADRATIC FUNCTIONS CIRCUIT

Begin by completing the problem in cell #1. Search for your answer in the remaining cells. Put #2 in the problem blank: # \_\_\_\_\_. Work that question and proceed in this manner until you complete the circuit.

**ALL WORK MUST BE SHOWN FOR CREDIT TO BE RECEIVED.**

<p><b>Answer: <math>-0.74</math> &amp; <math>4.74</math></b></p> <p># <b>1</b> Complete the square; find the vertex and the range of <math>y = x^2 + 2x - 35</math></p>	<p><b>Answer: <math>-2</math></b></p> <p># _____ Factor completely to find the <math>x</math>-intercepts: <math>y = 6x^2 - 18x - 60</math></p>
<p><b>Answer: <math>(-3, 25)</math>; <math>(-\infty, 25]</math> or <math>y \leq 25</math></b></p> <p># _____ Factor completely to find the <math>x</math>-intercepts: <math>y = 12x^2 - 17x - 7</math></p>	<p><b>Answer: <math>(3, -22)</math>; <math>[-22, \infty)</math> or <math>y \geq -22</math></b></p> <p># _____ Find the <math>x</math>-intercepts of <math>y = -2x^2 + 8x + 7</math> <i>If necessary, round to 2 decimal places.</i></p>
<p><b>Answer: <math>-2.63</math> &amp; <math>0.63</math></b></p> <p># _____ Factor completely to find the <math>x</math>-intercepts: <math>y = -2x^2 + 2x + 112</math></p>	<p><b>Answer: <math>x = -2</math>; <math>(0, -3)</math></b></p> <p># _____ Find the <math>x</math>-intercepts of <math>y = 3x^2 - 18x + 5</math> <i>If necessary, round to 2 decimal places.</i></p>
<p><b>Answer: <math>0.29</math> &amp; <math>5.71</math></b></p> <p># _____ Write the quadratic function in the appropriate form with vertex <math>(-2, 6)</math> &amp; that passes through <math>(-1, 3)</math>. Identify the value of <math>a</math>.</p>	<p><b>Answer: <math>(2, -11)</math>; <math>(-\infty, -11]</math> or <math>y \leq -11</math></b></p> <p># _____ Write the quadratic function in the appropriate form with <math>x</math>-intercepts of <math>-6</math> &amp; <math>12</math> and that passes through <math>(14, 4)</math>. Identify the value of <math>a</math>.</p>

<p><b>Answer:</b> <math>-\frac{1}{3}</math> &amp; <math>\frac{7}{4}</math></p> <p>#_____ Find the axis of symmetry and <math>y</math>-intercept of <math>y = -2(x + 3)^2 - 1</math></p>	<p><b>Answer:</b> <math>-\frac{1}{3}</math> &amp; <math>\frac{2}{3}</math></p> <p>#_____ Find the vertex and the range of <math>y = -(x - 4)^2 + 1</math></p>
<p><b>Answer:</b> <math>-\frac{1}{10}</math></p> <p>#_____ Complete the square; find the vertex and the range of <math>y = 3x^2 - 18x + 5</math></p>	<p><b>Answer:</b> <math>x = -3</math>; <math>(0, -19)</math></p> <p>#_____ Find the <math>x</math>-intercepts of <math>y = -3x^2 - 6x + 5</math> <i>If necessary, round to 2 decimal places.</i></p>
<p><b>Answer:</b> <math>-7</math> &amp; <math>8</math></p> <p>#_____ Write the quadratic function in the appropriate form with vertex <math>(4, -1)</math> &amp; that passes through <math>(8, 3)</math>. Identify the value of <math>a</math>.</p>	<p><b>Answer:</b> <math>(4, 1)</math>; <math>(-\infty, 1]</math> <i>or</i> <math>y \leq 1</math></p> <p>#_____ Write the quadratic function in the appropriate form with <math>x</math>-intercepts of <math>1</math> &amp; <math>9</math> and that passes through <math>(0, -18)</math>. Identify the value of <math>a</math>.</p>
<p><b>Answer:</b> <math>-3</math></p> <p>#_____ Factor completely to find the <math>x</math>-intercepts: <math>y = 6x^2 - 7x - 3</math></p>	<p><b>Answer:</b> <math>-2</math> &amp; <math>5</math></p> <p>#_____ Complete the square; find the vertex and the range of <math>y = -x^2 - 6x + 16</math></p>
<p><b>Answer:</b> <math>\frac{1}{4}</math></p> <p>#_____ Find the vertex and the range of <math>y = -3(x - 2)^2 - 11</math></p>	<p><b>Answer:</b> <math>(-1, -36)</math>; <math>[-36, \infty)</math> <i>or</i> <math>y \geq -36</math></p> <p>#_____ Find the axis of symmetry and <math>y</math>-intercept of <math>y = 0.25(x + 2)^2 - 4</math></p>