

MPM 2DI

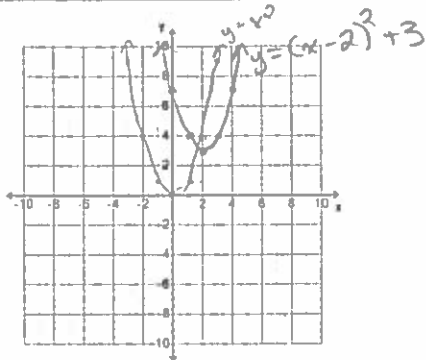
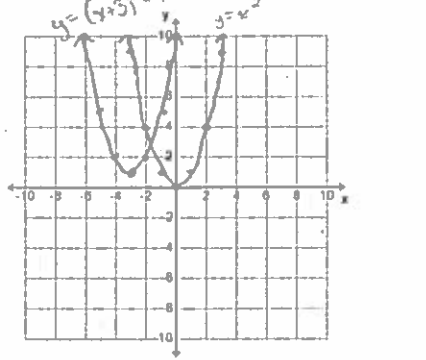
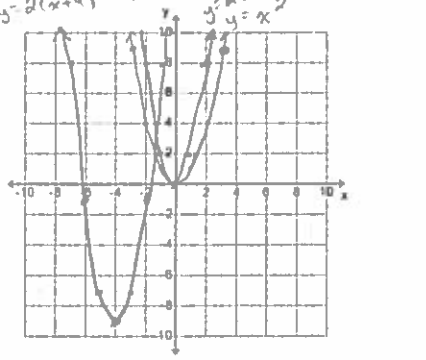
Graphing Strategies Review

Graph each of the following:

A. Using Factored form and the Zeros (Intercepts) **Show your work in the space provided.**

<p>$y = (x-5)(x+3)$</p> <p><u>Zeros</u> $x = 5$ and $x = -3$</p> <p><u>axis of symmetry</u> $x = 1$ $\frac{5+(-3)}{2} = \frac{2}{2} = 1$</p> <p>$y = (1-5)(1+3)$ $y = -16$ vertex (1, -16)</p>	
<p>$y = x^2 + 2x - 8$</p> <p>$y = (x+4)(x-2)$</p> <p><u>Zeros</u> $x = -4$ and $x = 2$</p> <p><u>axis of symmetry</u> $\frac{-4+2}{2} = -1$ $x = -1$</p> <p>$y = (-1)^2 + 2(-1) - 8$ $y = 1 - 2 - 8$ $y = -9$ vertex at (-1, -9)</p>	
<p>$y = -x^2 - 2x + 8$</p> <p>$y = -(x^2 + 2x - 8)$</p> <p>$y = -(x+4)(x-2)$</p> <p><u>Zeros</u> $x = -4$ and $x = 2$</p> <p><u>axis of symmetry</u> $\frac{-4+2}{2} = \frac{-2}{2} = -1$ $x = -1$</p> <p>$y = -(-1)^2 - 2(-1) + 8$ $y = -1 + 2 + 8$ $y = 9$ vertex at (-1, 9)</p>	
<p>$y = 2x^2 - x - 3$</p> <p>$y = (2x-3)(x+1)$</p> <p><u>Zeros</u> $x = \frac{3}{2}$ or $x = -1$</p> <p><u>axis of symmetry</u> $\frac{\frac{3}{2} + (-1)}{2} = \frac{\frac{1}{2}}{2} = \frac{1}{4}$ $x = \frac{1}{4}$</p> <p>$y = 2(\frac{1}{4})^2 - (\frac{1}{4}) - 3$ $y = 2(\frac{1}{16}) - \frac{1}{4} - 3$ $y = \frac{2}{8} - \frac{2}{8} - \frac{24}{8}$ $y = \frac{-24}{8} = -3$ vertex at ($\frac{1}{4}, -3\frac{1}{8}$)</p>	

B. Graph the following using Vertex Form and Transformations. **Show your work in the space provided.**

$y = (x-2)^2 + 3$	
$y = x^2 + 6x + 10$ $y = (x^2 + 6x + 9 - 9) + 10$ $y = (x+3)^2 + 1$ <p>left 3 up 1</p>	
$y = 2x^2 + 16x + 27$ $y = (2x^2 + 16x) + 27$ $y = 2(x^2 + 8x) + 27$ $y = 2(x^2 + 8x + 16 - 16) + 27$ $y = 2(x+4)^2 + 27 - 36$ $y = 2(x+4)^2 - 9$ <p>stretch by 2 left 4 down 9</p>	
$y = -3x^2 - 6x + 7$ $y = -3(x^2 + 2x) + 7$ $y = -3(x^2 + 2x + 1 - 1) + 7$ $y = -3(x+1)^2 + 3 + 7$ $y = -3(x+1)^2 + 10$ <p>reflect on x-axis stretch by 3 left 1 up 10</p>	