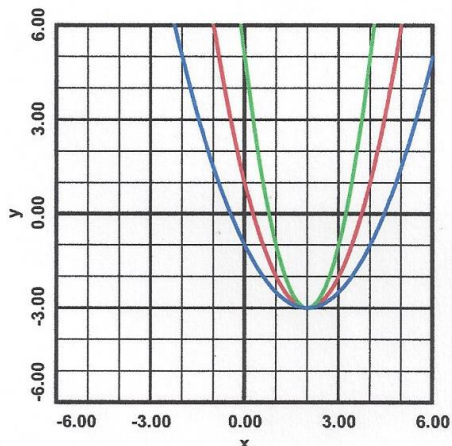


PRE-AP ALGEBRA 2

- 1) On the grid provided, graph  $y + 3 = (x - 2)^2$ ,  
 $y + 3 = 2(x - 2)^2$  and  $y + 3 = \frac{1}{2}(x - 2)^2$ .



Red line:  $y + 3 = (x - 2)^2$

Green line:  $y + 3 = 2(x - 2)^2$

Blue line:  $y + 3 = \frac{1}{2}(x - 2)^2$

- 2) Convert the parabolas in standard form to vertex form by completing the square.

a)  $y = x^2 + 10x + 33$

b)  $y = 2x^2 - 28x + 95$

(a)  $y - 33 = x^2 + 10x$   
 $+25 \quad +25$

$y - 8 = x^2 + 10x + 25$

$y - 8 = (x + 5)^2$

(b)  $y - 95 = 2x^2 - 28x$

$y - 95 = 2(x^2 - 14x)$   
 $+2 \cdot 49 \quad +49$

$y + 3 = 2(x^2 - 14x + 49)$

$y + 3 = 2(x - 7)^2$

1B.5 CLASSWORK

- 3) Convert the parabola in vertex form  
 $y + 13 = 3(x - 4)^2$  to standard form.

$y + 13 = 3(x^2 - 8x + 16)$

$y + 13 = 3x^2 - 24x + 48$

$y = 3x^2 - 24x + 35$

- 4) Solve the quadratic equations for  $x$  by completing the square.

a)  $x^2 - 4x - 12 = 0$

b)  $10x^2 + 17x - 20 = 0$

(a)  $x^2 - 4x = 12$   
 $+4 \quad +4$

$(x - 2)^2 = 16$ ,  $x - 2 = \pm 4$ ,  $x = 2 \pm 4$

$x = 6$  or  $x = -2$

(b)  $10x^2 + 17x = 20$

$10(x^2 + \frac{17}{10}x) = 20$   
 $+2 \cdot \frac{289}{400} \quad +10 \cdot \frac{289}{400}$

$10(x^2 + \frac{17}{10}x + \frac{289}{400}) = \frac{1089}{40}$

$10(x + \frac{17}{20})^2 = \frac{1089}{40}$

$(x + \frac{17}{20})^2 = \frac{1089}{400}$

$x + \frac{17}{20} = \pm \frac{33}{20}$ ,  $x = -\frac{17}{20} \pm \frac{33}{20}$

$x = \frac{16}{20} = \frac{4}{5}$  or  $x = \frac{-50}{20} = -\frac{5}{2}$