

Math 2

Name _____

Writing Quadratics in Different Forms

Date _____

Given the quadratic equation, rewrite the equation in equivalent form

Standard Form	Vertex Form	Intercept Form
$y = x^2 + 7x - 8$ $y + 8 = x^2 + 7x + \frac{49}{4}$ $\quad \quad \quad + \frac{49}{4}$ $\frac{32}{4} + \frac{49}{4}$	$Y = (x + \frac{7}{2})^2 - \frac{81}{4}$ $(x+3)(x+3)$	$Y = (x+8)(x-1)$
$Y = 2x^2 + 12x + 10$	$y = 2(x+3)^2 - 8$ $2(x^2 + 6x + 9) - 8$ $2x^2 + 12x + 18 - 8$	$2x^2 + 12x + 10$ $y = 2(x^2 + 6x + 5)$ $2(x+5)(x+1)$
$Y = x^2 + 5x - 14$ $Y + 14 = x^2 + 5x + \frac{25}{4}$ $\quad \quad \quad + \frac{25}{4}$ $\frac{56}{4} + \frac{25}{4} = \frac{81}{4}$	$Y = (x + \frac{5}{2})^2 - \frac{81}{4}$	$y = (x-2)(x+7)$ $Y = x^2 + 7x - 2x - 14$
$Y = 4x^2 - 8x - 96$	$y = 4(x-1)^2 - 100$ $4(x-1)(x-1) - 100$ $4(x^2 - 2x + 1) - 100$ $4x^2 - 8x + 4 - 100$	$Y = 4x^2 - 8x - 96$ $4(x^2 - 2x - 24)$ $y = 4(x-6)(x+4)$

Standard Form	Vertex Form	Intercept Form
$y = x^2 + 2x - 15$	$y = (x+1)^2 - 16$	$y = (x-3)(x+5)$
$y = -x^2 - 4x + 5$	$y = -(x+2)^2 + 9$ $- (x+2)(x+2) + 9$ $- (x^2 + 4x + 4) + 9$ $- x^2 - 4x - 4 + 9$ $- x^2 - 4x + 5$	$y = -x^2 - 4x + 5$ $- (x^2 + 4x - 5)$ $y = - (x+5)(x-1)$
$y = x^2 - 2x - 24$	$y = (x-1)^2 - 25$	$y = (x-6)(x+4)$
$y = -4x^2 + 8x + 60$	$y = -4(x-1)^2 + 64$ $-4(x-1)(x-1) + 64$ $-4(x^2 - 2x + 1) + 64$ $-4x^2 + 8x - 4 + 64$	$y = -4x^2 + 8x + 60$ $= -4(x^2 - 2x - 15)$ $= -4(x-5)(x+3)$