

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
$y = x^2 + 3x - 28$ $\frac{28}{1} + \frac{9}{4}$ $\frac{112}{4} + \frac{9}{4} = \frac{121}{4}$	$y + 28 = x^2 + 3x + \frac{9}{4}$ $+ \frac{9}{4}$ $y + \frac{121}{4} = (x + \frac{3}{2})^2$ $y = (x + \frac{3}{2})^2 - \frac{121}{4}$	$y = (x+7)(x-4)$
$y = 3x^2 - 12x - 15$	$y = 3(x-2)^2 - 27$ $3(x-2)(x-2) - 27$ $3(x^2 - 4x + 4) - 27$ $3x^2 - 12x + 12 - 27$ $3x^2 - 12x - 15$	$y = 3(x^2 - 4x - 5)$ $= 3(x-5)(x+1)$
$y = x^2 - x - 30$	$y + 30 = x^2 - x + \frac{1}{4}$ $+ \frac{1}{4}$ $y + \frac{121}{4} = (x - \frac{1}{2})^2$ $y = (x - \frac{1}{2})^2 - \frac{121}{4}$	$y = (x-6)(x+5)$
$y = 4x^2 + 8x - 140$	$y = 4(x+1)^2 - 144$ $4(x+1)(x+1) - 144$ $4(x^2 + 2x + 1) - 144$ $4x^2 + 8x + 4 - 144$ $4x^2 + 8x - 140$	$y = 4(x^2 + 2x - 35)$ $= 4(x+7)(x-5)$