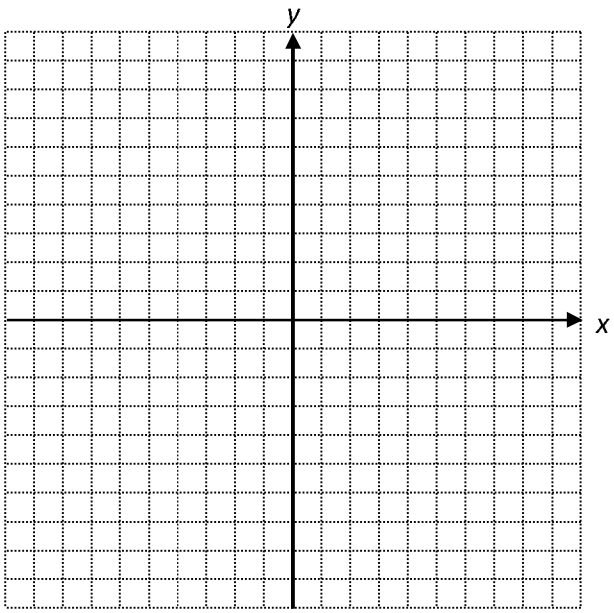
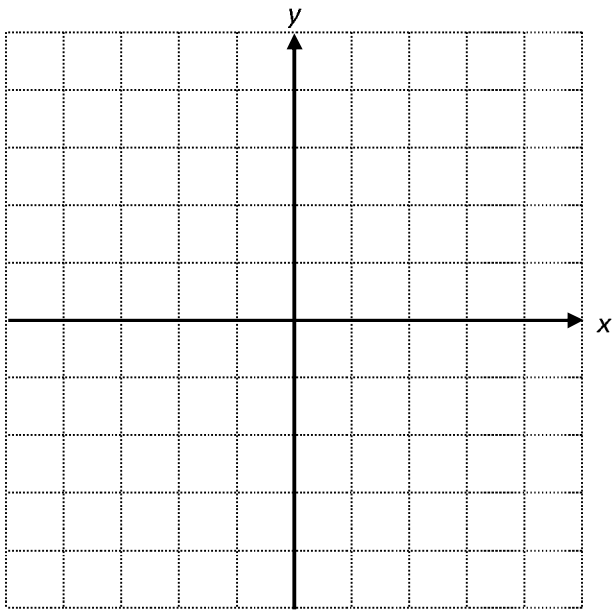
DAY 5 – Vertex Form of Quadratic Relations: $y = a(x - h)^2 + k$

1. For each of the following quadratic relations in vertex form, (i) state the transformations, (ii) graph the parabola, and (iii) state the key features.

	$y = -2(x - 4)^2 + 5$	$y = {}^1/_3(x + 2)^2 - 4$
(I) TRANSFORMATIONS		
(II) GRAPH		
(III) KEY FEATURES	zeros *y*-intercept vertex axis of symmetry optimal value	zeros *y*-intercept vertex axis of symmetry optimal value

2. Collect the following information for each quadratic in vertex form. The first one is done.

	Transformations					
Equation	**a**	**h**	**k**	**vertex**	**axis of symmetry**	**optimal value**
$y=-7(x+4)^2+10$	• reflection • stretch by 7	• left 4	• up 10	(–4, 10)	$x=-4$	y=10, max
$y=2(x-3)^2-5$						
$y=-3(x-5)^2-1$						
$y=-(x+1)^2+6$						
$y=\frac{1}{3}(x+5)^2-3$						
$y=0.75(x-3)^2+1$						
$y=-(x+1)^2-5$						
$y=4(x-2)^2-3$						
$y=-3(x+5)^2+2$						
$y=-2(x-4)^2+1$						
$y=\frac{1}{2}(x-4)^2+3$						