

Equations of Parabolas

Translation	Vertex	p	Equation
Base parabola	(0,0)	3	$y = \frac{x^2}{12}$
$h = 7$	(7,0)	3	$y = \frac{(x-7)^2}{12}$
$h = -3$	(-3,0)	3	$y = \frac{(x+3)^2}{12}$
$k = 2$	(0,2)	3	$y = \frac{x^2}{12} + 2$
$k = 5$	(0,5)	3	$y = \frac{x^2}{12} + 5$
$h = 7; k = 2$	(7,2)	3	$y = \frac{(x-7)^2}{12} + 2$
$h = 9; k = 13$	(9,13)	3	

- For the filled in columns, what do you notice about how the values of h and k impact the equation of the parabola?
- How would the equations change if the p -value changed to 2? What about 1?
- Predict the equation for a parabola with a vertex at (9, 13) and a p -value of 3. How would the equation change if the p -value changed to 4?

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