lulumath

Transformations of Quadratic Graphs #2 - What does k in $y = a(x - h)^2 + k$ do to the graph?

Video Notes

Video Link

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↳ vertex form

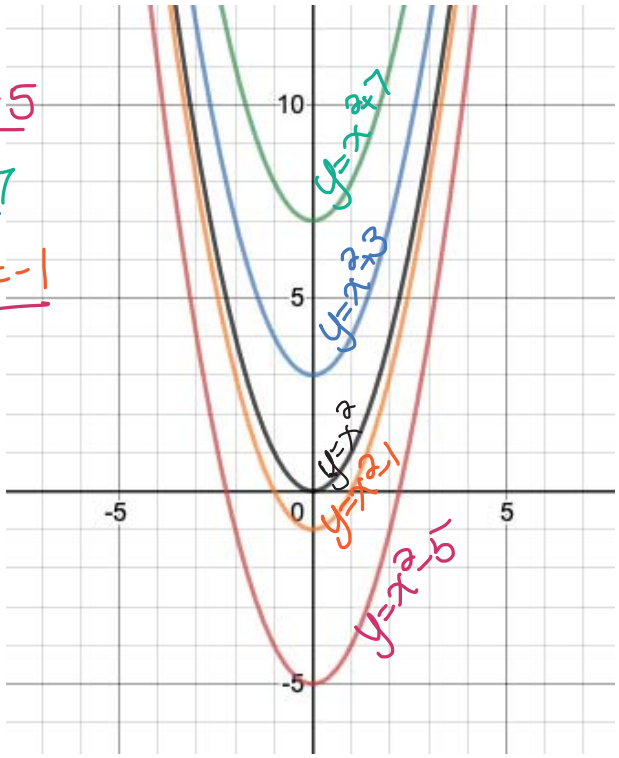
Use graphing technology to see what changing the k value does to the parent graph of a parabola: $y = x^2 + 0$ $K = 0$

$y = x^2 + 3$ → shifted up 3 units $K = 3$

$y = x^2 - 5$ → shifted down by 5 units $K = -5$

$y = x^2 + 7$ → shifted up by 7 units $K = 7$

$y = x^2 - 1$ → shifted down by 1 unit $K = -1$



Conclusion:

$y = x^2$ vs. $y = x^2 + K$

$K > 0$ (positive) → vertical translation up. (shifted up)

$K < 0$ (negative) → vertical translation down (shifted down)