

Algebra I: Unit 06 review :: Convert between forms, find x - and y -intercepts

Use the area model to write each expression in factored form and standard form. Then, find the x - and y -intercepts of the parabola and state whether the parabola will open up or down.

	Factored form	Area model	Standard form	x -intercepts	y -intercept	Opening up or down?
1.	$(x+7)(x+6)$	$ \begin{array}{c} x \quad +7 \\ \begin{array}{ c c } \hline x^2 & 7x \\ \hline 6x & 42 \\ \hline \end{array} \end{array} $	$y = x^2 + 13x + 42$	$x+7=0$ $x=-7$ $x+6=0$ $x=-6$	$y=42$	UP
2.	$y = (-3x + 7)(6x + 4)$	$ \begin{array}{c} -3x \quad 7 \\ \begin{array}{ c c } \hline -18x^2 & 42x \\ \hline -12x & 28 \\ \hline \end{array} \end{array} $	$-18x^2 + 30x + 28$	$-3x+7=0$ $x=\frac{7}{3}$ $6x+4=0$ $x=-\frac{4}{6}$	$y=28$	DOWN
3.	$(x+6)(x-6)$	$ \begin{array}{c} x \quad -6 \\ \begin{array}{ c c } \hline x^2 & -6x \\ \hline 6x & -36 \\ \hline \end{array} \end{array} $	$y = x^2 - 36$	$x+6=0$ $x=-6$ $x-6=0$ $x=6$	$y=-36$	UP