**AA Unit 2: Graphs and their transformations**

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| I can sketch the parent graph of a:1. Linear Function $y=x$
2. Quadratic Function $y=x^{2}$
3. Cubic Function $y=x^{3}$
4. Square Root Function $y=\sqrt{x}$
5. Cube Root Function $y=\sqrt[3]{x}$
6. Absolute Value Functions $y=|x|$
7. Rational Functions $y=\frac{1}{x}$
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| I can graph and analyze1. Piecewise Functions
2. Step Functions

 $y= 0, -1\leq x\leq 0$ $1, 0<x\leq 1$ $2, 1<x\leq 2$ $3, 2<x\leq 3$ ... |  |
| I can graph and describe transformation of functions* Horizontal and Vertical Translations
	+ $y=f(x)+k$
	+ $y=f(x+h)$
* Horizontal and Vertical Dilations (stretch or compress)
	+ $y=af(x)$
	+ $y=f(bx)$
* Horizontal and Vertical Reflections
	+ $y= -f(x)$
	+ $y=f(-x)$
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| I can Complete the Square to write a Quadratic Function in Graphing form.1. Write the function $p(x)=ax^{2}+bx+c$ in graphing form and describe the transformations used to change the parent function $y=x^{2}$ to $p(x)$.
2. Model quadratic situations using Graphing Form.
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