

Graphing Quadratics

$$y = ax^2 + bx + c$$

$a \rightarrow$ determines if it opens ⁺ UP or ⁻ DOWN

vertex: the maximum or min. point

Vertex Formula: $(-\frac{b}{2a}, y)$

y -intercept = c

Ex) $f(x) = -4x^2 - 12x - 3$

a) open down

b) Axis of symmetry $x = \frac{-b}{2a} = \frac{12}{2(-4)} = \frac{12}{-8} = -\frac{3}{2}$

c) Vertex $(-\frac{3}{2}, 6)$

$$y = -4\left(-\frac{3}{2}\right)^2 - 12\left(-\frac{3}{2}\right) - 3$$
$$= 6$$

d) y -int = -3



7.328

15-23