

Write an Equation in Vertex Form

Vertex: $(-6, -4)$ Through: $(-2, 12)$

$$y = a(x - h)^2 + k$$

$$h = -6 \quad x = -2$$

$$k = -4 \quad y = 12$$

$$y = (x - (-6))^2 - 4$$

$$y = (x + 6)^2 - 4$$

$$12 = a(-2 - (-6))^2 - 4$$

$$12 = a(-2 + 6)^2 - 4$$

$$12 = a(4)^2 - 4$$

$$12 = 16a - 4$$

$$+4 \quad +4$$

$$16 = 16a \rightarrow a = 1$$