

Title: Vertex Form of PARABOLA

als: WS

HW# 3.8

Reflections:

GMPH
Transformations
→
↓

I Vertex Form of PARABOLA

~ This is completed square form

$$y = a(x-h)^2 + k \quad (-h, k) = \text{vertex}$$

$a = \text{vertical stretch}$

1) $f(x) = x^2 + 12x + 20$

$$f(x) = x^2 + 12x + \underline{36} + 20 - \underline{36}$$

$$f(x) = (x+6)^2 - 16 \quad \text{STOP! You're done :)$$

V: $(-6, -16)$

$a = 1$

2) $f(x) = x^2 + 3 \rightarrow \text{ALREADY A COMPLETE SQUARE :)$

V: $(0, 3)$

$a = 1$

3) $f(x) = x^2 - 6x - 10$

4) $f(x) = 2x^2 + 12x + 13$