

VERTEX FORM

The vertex form looks like this:

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

(h, k) is the vertex.

Write $y = 4x^2 + 8x - 3$ in vertex form

Step 1: look at the x terms and find the common number. This will be your "a".

EX: $4x^2 + 8x \rightarrow 4(x^2 - 4)$

Step 2: Rewrite $(x^2 - 4)$ with the square as the exponent.

EX: $(x-2)^2$

Step 3: Now put it all together like this:

EX: $y = 4(x-2)^2 - 3$

$\downarrow \quad \downarrow \quad \downarrow^2 \quad \downarrow$

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

Click on the next image for vertex info.