

$$\frac{f(x)}{2} = \frac{2x^2}{2} - \frac{4x}{2} - \frac{6}{2}$$

standard to vertex when  $a \neq 1$

① divide by a

$$\frac{f(x)}{2} = x^2 - 2x - 3$$

$$\frac{f(x)}{2} = \underbrace{x^2 - 2x + \frac{1}{2}}_{\text{}} - 3 - \frac{1}{2}$$

② add + \_\_\_ and - \_\_\_ around the constant term

$$\left(\frac{b}{2}\right)^2 = \left(\frac{-2}{2}\right)^2 = (-1)^2 = 1$$

③  $\left(\frac{b}{2}\right)^2 \rightarrow$  put in + \_\_\_ and - \_\_\_ spots

~~$$\frac{f(x)}{2} = 2(x-1)^2 - 4 \cdot 2$$~~

④  $\left(\frac{b}{2}\right)$  is what we use to factor

$$\boxed{f(x) = 2(x-1)^2 - 8}$$

$$\left(x + \left(\frac{b}{2}\right)\right)^2$$

vertex: (1, -8)

⑤ simplify/CLT constants

⑥ multiply by a