

Find the vertex by completing the square:

$$f(x) = -6x^2 - 8x + 5$$

$$y = -6x^2 - 8x + 5$$
$$y = (-6x^2 - 8x) + 5$$

$$y = -6\left(x^2 + \frac{4}{3}x\right) + 5$$
$$\frac{1}{2} \cdot \frac{4}{3} \quad \frac{4}{6} \left(\frac{2}{3}\right)^2$$