

Convert into vertex form and determine the vertex

$$f(x) = 2x^2 + 8x + 7$$

$$f(x) = ax^2 + bx + c \longrightarrow f(x) = a(x-h)^2 + k$$

$$f(x) = (2x^2 + 8x) + 7$$

$$f(x) = 2(x^2 + 4x) + 7$$

$$d = \left(\frac{4}{2}\right)^2 = 2^2 = 4$$