

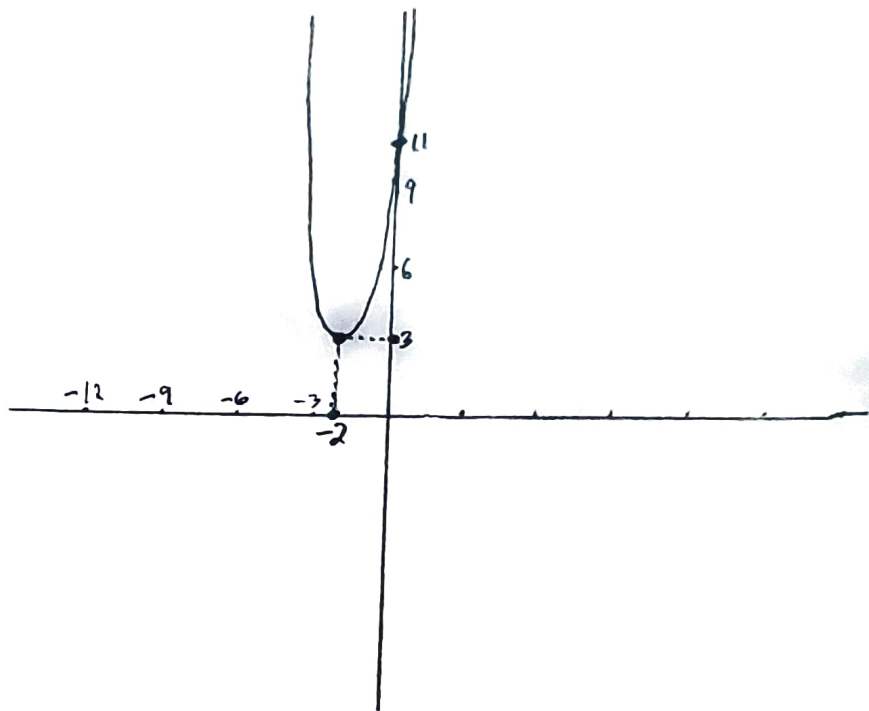
## Section 3.1

$$\begin{aligned} (32) \quad g(x) &= 2x^2 + 8x + 11 \\ &= 2(x^2 + 4x) + 11 \\ &= 2(x^2 + 4x + 4) - 2(4) + 11 \\ &= 2(x+2)^2 + 3 \end{aligned}$$

$$\text{Vertex } (h, k) = (-2, 3)$$

$$\text{minimum value} = 3$$

$$\text{y-intercept } y = 11$$



$$\begin{aligned} (34) \quad h(x) &= -4x^2 - 4x + 3 \\ &= -4(x^2 + x) + 3 \\ &= -4\left(x^2 + x + \frac{1}{4}\right) - (-4)\left(\frac{1}{4}\right) + 3 \\ &= -4\left(x + \frac{1}{2}\right)^2 + 4 \end{aligned}$$

$$\text{Vertex } (h, k) = \left(-\frac{1}{2}, 4\right)$$

$$\text{max value} = 4$$

$$\text{y-intercept } y = 3$$

$$\text{x-intercepts } \left(x + \frac{1}{2}\right)^2 = 1$$

$$x + \frac{1}{2} = \pm 1$$

$$x = -\frac{1}{2} \pm 1$$

$$x = -\frac{3}{2}, \frac{1}{2}$$

