

Use completing the square to find the x-intercepts of the following function.

$$f(x) = x^2 + 5x - 30$$

Exercise 1 Fill in the missing blanks below to solve for x .

$$x^2 + 5x - 30 = \left(x + \boxed{\frac{5}{2}}\right)^2 + \boxed{-\frac{145}{4}}$$

$$\left(x + \boxed{\frac{5}{2}}\right)^2 + \boxed{-\frac{145}{4}} = 0$$

$$\left(x + \boxed{\frac{5}{2}}\right)^2 = \boxed{\frac{145}{4}}$$

$$\left(x + \boxed{\frac{5}{2}}\right) = \pm \boxed{\sqrt{\frac{145}{4}}}$$

$$x = \boxed{-\frac{5}{2}} \pm \boxed{\sqrt{\frac{145}{4}}}$$

Exercise 1.1 Write the equation in factored form.

$$\left(x + \boxed{\frac{5 - \sqrt{145}}{2}}\right) \left(x + \boxed{\frac{5 + \sqrt{145}}{2}}\right) = 0 \text{ (Input the smaller value first).}$$

Exercise 1.1.1 What are the x -intercepts for this function?

$$\text{Smaller } x \text{ intercept } \left(\boxed{-\left(\frac{5 + \sqrt{145}}{2}\right)}, 0\right)$$

$$\text{Larger } x \text{ intercept } \left(\boxed{-\left(\frac{5 - \sqrt{145}}{2}\right)}, 0\right)$$