

Exercise 28

For the following exercises, find the intercepts of the functions.

$$f(x) = x^3 + 27$$

Solution

In order to find the y -intercept, set $x = 0$.

$$f(0) = 0^3 + 27 = 27$$

Therefore, the y -intercept is $(0, 27)$. To find the x -intercept(s), set $y = 0$ and solve the equation for x .

$$x^3 + 27 = 0$$

$$x^3 = -27$$

Take the cube root of both sides.

$$\sqrt[3]{x^3} = \sqrt[3]{-27}$$

$$x = -3$$

Therefore, the x -intercept is $(-3, 0)$.

