

Exercise 63

For the following exercises, use the given information about the polynomial graph to write the equation.

Degree 3. Zeros at $x = -3$, $x = -2$ and $x = 1$. y -intercept at $(0, 12)$.

Solution

Based on the zeros, the model polynomial function is

$$f(x) = A(x + 3)(x + 2)(x - 1).$$

Use the provided point $(0, 12)$ to determine A .

$$12 = A(0 + 3)(0 + 2)(0 - 1) \rightarrow 12 = A(-6) \rightarrow A = -2$$

Therefore,

$$f(x) = -2(x + 3)(x + 2)(x - 1).$$

