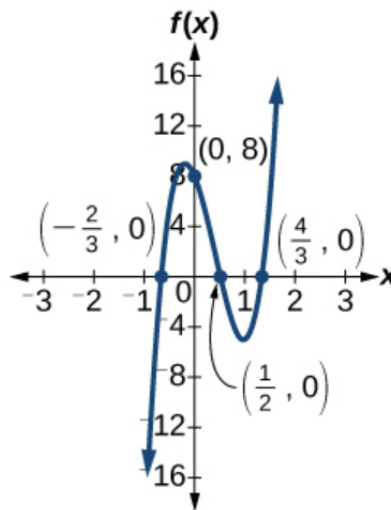


Exercise 72

For the following exercises, use the graphs to write a polynomial function of least degree.



Solution

Use the labelled x -intercepts to write the model polynomial function.

$$f(x) = A \left(x + \frac{2}{3} \right) \left(x - \frac{1}{2} \right) \left(x - \frac{4}{3} \right)$$

Use the labelled y -intercept to determine A .

$$8 = A \left(0 + \frac{2}{3} \right) \left(0 - \frac{1}{2} \right) \left(0 - \frac{4}{3} \right) \rightarrow 8 = A \left(\frac{4}{9} \right) \rightarrow A = 18$$

Therefore,

$$f(x) = 18 \left(x + \frac{2}{3} \right) \left(x - \frac{1}{2} \right) \left(x - \frac{4}{3} \right).$$