

Exercise 23

For the following exercises, determine the end behavior of the functions.

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

Solution

This polynomial is in factored form. Expand it.

$$f(x) = 2x^5 - x^3 + x^2$$

For a polynomial function, look at the leading term, $2x^5$. x is raised to an odd power and the coefficient is positive, so $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$ and $f(x) \rightarrow \infty$ as $x \rightarrow \infty$.

