

End Behavior of Polynomials

Date _____

Describe the end behavior of each function.

1) $f(x) = -x^4 + x^3 + x^2 - 4$

2) $f(x) = x^4 - 4x^2 + x + 2$

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

4) $f(x) = x^3 - x^2 + 4$

5) $f(x) = -x^5 + 4x^3 - 3x + 1$

6) $f(x) = x^3 - 4x^2 + 2$

7) $f(x) = x^3 - x^2$

8) $f(x) = -x^3 + x^2 + 4$

9) $f(x) = -x^5 + 2x^3 + 4$

10) $f(x) = x^3 - 3x^2 - 3$

11) $f(x) = -x^3 + 4x^2 - 5$

12) $f(x) = x^4 - 2x^2 - x - 3$

13) $f(x) = 2x^2 - 16x + 29$

14) $f(x) = -x^5 + 4x^3 - 2x + 3$

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

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

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

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

19) $f(x) = -x^4 - x^3 + 2x^2 + 1$

20) $f(x) = -x^3 + 4x^2 - 3$

Answers to End Behavior of Polynomials

1) $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$

4) $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$

7) $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$

10) $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$

13) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$

16) $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$

19) $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$

2) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$

5) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$

8) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$

11) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$

14) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$

17) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$

20) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$

3) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$

6) $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$

9) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$

12) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$

15) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$

18) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$