



## End Behavior of Polynomial Functions

 Find the end behavior of the functions.

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

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

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

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

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

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

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

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

5)  $f(x) = x^2 - 6x + 12$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

6)  $f(x) = x^3 + 8x + 16$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

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

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

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

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

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

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

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

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

11)  $f(x) = -x^2 - 7x - 12$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

12)  $f(x) = -x^2 + 8x$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

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

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

14)  $f(x) = x^3 + 10x^2 + 22x + 4$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$

$f(x) \rightarrow \underline{\hspace{2cm}}$ , as  $x \rightarrow \underline{\hspace{2cm}}$