

State the End Behavior of each polynomial.

1. $y = x^4 + 7x^2 - x + -7x^4 + 14$

2. $y = 11x^2 + 4x^3 - x^5 + 3x - 18$

3. $y = (x - 7)^2(x + 4)^3(6 - 2x)^2$

4. $y = -3x^2(5x - 9)(2 - 3x)^3(4x - 8)^2$

State the End Behavior of each polynomial.

Answers

1. $y = \underline{x^4} + 7x^2 - x + \underline{-7x^4} + 14$

$y = -6x^4 + 7x^2 - x + 14$
 ↑ ↑
 NEG EVEN

(↘, ↘)

3. $y = \underbrace{(x - 7)^2}_{(x^2)} \underbrace{(x + 4)^3}_{(x^3)} \underbrace{(6 - 2x)^2}_{(-2x)^2}$

$x^2 \cdot x^3 \cdot 4x^2 = 4x^7$
 ↑ ↑
 pos ODD

(↙, ↗)

2. $y = 11x^2 + 4x^3 - x^5 + 3x - 18$

$y = -x^5 + 4x^3 + 11x^2 + 3x - 18$
 ↑ ↑
 NEG ODD

(↗, ↘)

4. $y = -3x^2(5x - 9)(2 - 3x)^3(4x - 8)^2$

DEGREE: $2 + 1 + 3 + 2 = 8$ even

L.C.: $(-)(+)(-)^3(+)^2$
 $= (-)(+)(-)(+) = +$ pos

Pos EVEN (↗, ↗)