LT AA16b

What are the characteristics of polynomials when they are graphed?

4/18

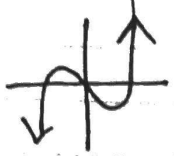
Even Positive
(Degree) (orientation)
$x^4, (x-2)^2, x^6$

End Behavior: Both ends open up ∪, W

$x \to \infty, f(x) \to \infty$
$x \to -\infty, f(x) \to \infty$

Odd Positive
$f(x) = x^3, x^5,$

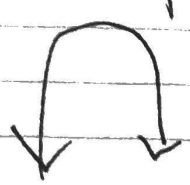
End Behavior: one end goes up (positive) the other goes down (negative)



$x \to \infty, f(x) \to \infty$ (up)
$x \to -\infty, f(x) \to -\infty$ (↓)

Even Degree Negative orientation
$-x^2, -(x-2)^3(x+1)$

End Behavior: Both ends open down

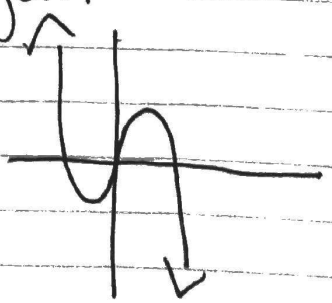


End Behavior:

$x \to \infty, f(x) \to -\infty$
$x \to -\infty, f(x) \to -\infty$

Odd Degree Negative orientation
$-x^3$

End Behavior: one end goes down (positive) and one end goes up (negative)



$x \to \infty, f(x) \to -\infty$
$x \to -\infty, f(x) \to \infty$

1.) $f(x) = -6x^5 + 2x^3 - 6$

Degree = 5, odd
orientation: positive
end behavior:
$x \to \infty$, $f(x) \to \infty$
$x \to -\infty$, $f(x) \to -\infty$

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

$-(x-4)(x-4)(x-4)(x+2)$

Degree = 4, even
orientation = negative
end behavior: $x \to \infty$, $f(x) \to -\infty$
$x \to -\infty$, $f(x) \to -\infty$