

1.6 Graphing Polynomials

Day 8

4/02/15

End behavior :

the end behavior describes the graph at the far left and at the far right.

Turning Point :

where the graph changes direction

These are determined by the degree of the polynomial

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If the degree is odd:

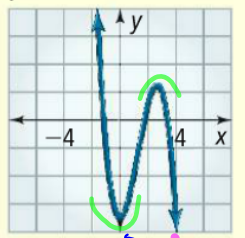
even number of turning points

$a > 0$, ends down then up

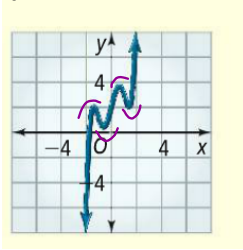
$a < 0$, ends up then down

EXAMPLES:

$$y = -x^3 + 4x^2 - 7$$



$$y = x^5 - 4x^3 + 4x + 2$$



turning point

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If the degree is even:

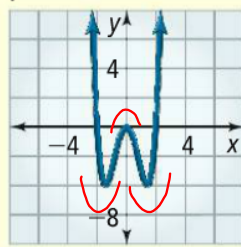
odd number of turning points

$a > 0$, both ends up

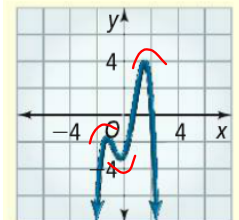
$a < 0$, both ends down

EXAMPLES:

$$y = x^4 - 4x^2$$



$$y = -x^4 + 4x^2 + 2x - 3$$



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Describe the end behavior:

$$y = 4x^3 - 3x$$

- 2 turning points
- end points: up, then down

$$y = -2x^4 + 8x^3 - 8x^2 + 2$$

end behavior → turning point

3 turning points
both end down

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