

# Bellwork Alg 2 Monday, November 4, 2019

Describe the end behavior of each polynomial.

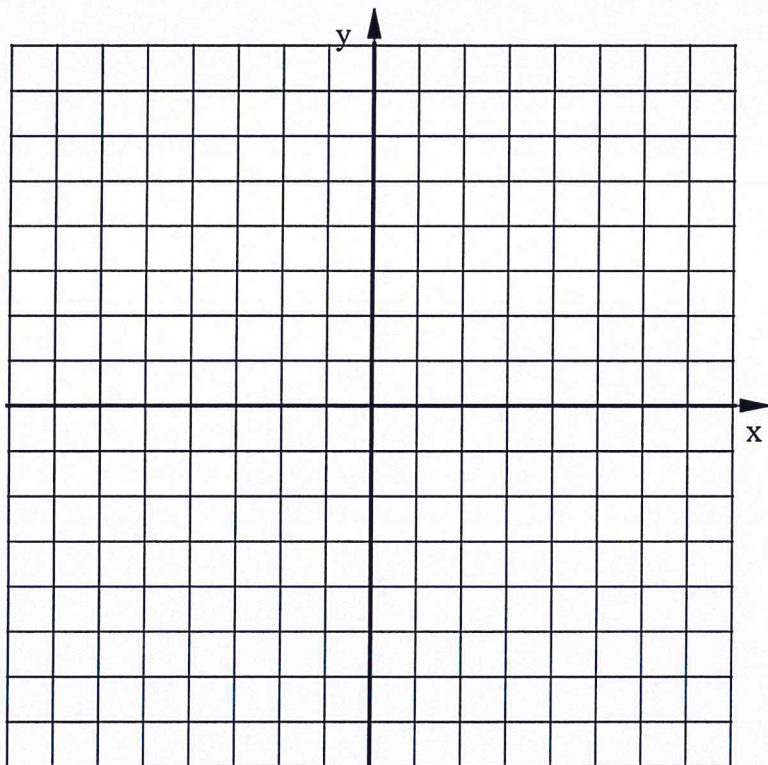
1.  $y = -8x^2 + 7x^3 - 2x + 14$

2.  $f(x) = 2x(4 - 3x)(5x + 6)^2$

3.  $f(x) = -x^2(2x + 9)(8 - x)^2(4 - 7x)^3$

4. Sketch the graph described below. Show all points of inflection, maximums, and minimums.

- Decreasing and Concave Up on  $(-\infty, -5)$
- Decreasing and Concave Down on  $(-5, -3)$
- Decreasing and Concave Up on  $(-3, 1)$
- Increasing and Concave Up on  $(1, 3)$
- Increasing and Concave Down on  $(3, 5)$
- Decreasing and Concave Down on  $(5, \infty)$



Describe the end behavior of each polynomial.

1.  $y = -8x^2 + 7x^3 - 2x + 14$

POSITIVE ODD



DOWN UP

$y \rightarrow -\infty$  as  $x \rightarrow -\infty$ ;  $y \rightarrow \infty$  as  $x \rightarrow \infty$

3.  $f(x) = -x^2(2x+9)(8-x)^2(4-7x)^3$

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

$= (-x^2)(2x)(x^2)(-343x^3)$

$= 686x^8$

POSITIVE EVEN



UP UP

$y \rightarrow \infty$  as  $x \rightarrow \pm\infty$

2.  $f(x) = 2x(4-3x)(5x+6)^2$

$(2x)(-3x)(5x)^2 = (2x)(-3x)(25x^2)$

$= -150x^4$

NEGATIVE EVEN



DOWN DOWN

$y \rightarrow -\infty$  as  $x \rightarrow \pm\infty$

4. Sketch the graph described below. Show all points of inflection, maximums, and minimums.

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- Decreasing and Concave Down on  $(-5, -3)$
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- Decreasing and Concave Down on  $(5, \infty)$

