

## Warm Up

1) What is the probability of rolling a die 8 times and landing on 3 exactly 3 times?

$${}^8C_3 \left(\frac{1}{6}\right)^3 \left(\frac{5}{6}\right)^5 = \boxed{0.104}$$

2) What is the middle term  $(3x + 4)^6$ ?

$${}^6C_3 (3x)^3 (4)^3 = \boxed{34,560 x^3}$$

3) Look over our topics from this week; Domain, Critical Points and End Behavior. Determine if you have questions on any of these.

Without graphing, describe the end behavior of the graph of the function.

1.  $f(x) = x^3 + 2x^2 - 3x - 10$

as  $x \rightarrow -\infty$ ,  $f(x) \rightarrow -\infty$

as  $x \rightarrow \infty$ ,  $f(x) \rightarrow \infty$

3.  $h(x) = -2x^4$

as  $x \rightarrow -\infty$ ,  $f(x) \rightarrow -\infty$

as  $x \rightarrow \infty$ ,  $f(x) \rightarrow -\infty$

5.  $f(x) = 3x^3$

as  $x \rightarrow -\infty$ ,  $f(x) \rightarrow -\infty$

as  $x \rightarrow \infty$ ,  $f(x) \rightarrow \infty$

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

as  $x \rightarrow -\infty$ ,  $f(x) \rightarrow \infty$

as  $x \rightarrow \infty$ ,  $f(x) \rightarrow -\infty$

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



as  $x \rightarrow -\infty$ ,  $f(x) \rightarrow \infty$

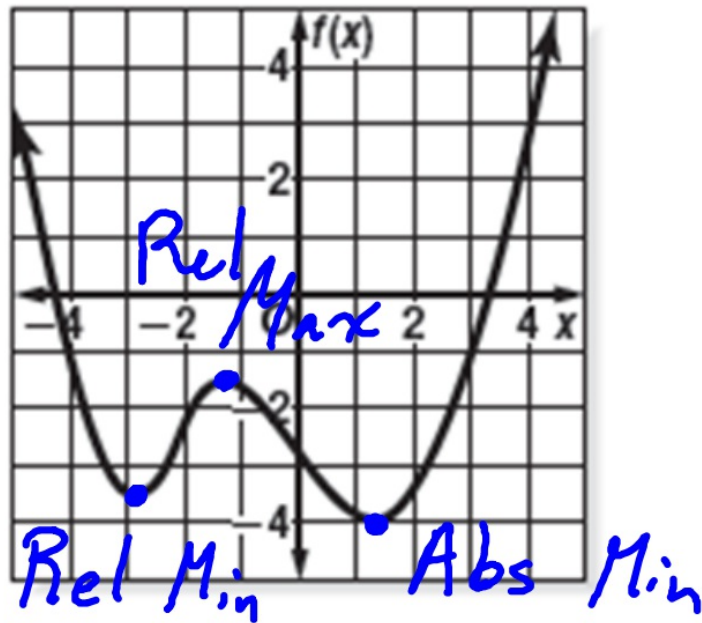
as  $x \rightarrow \infty$ ,  $f(x) \rightarrow \infty$

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

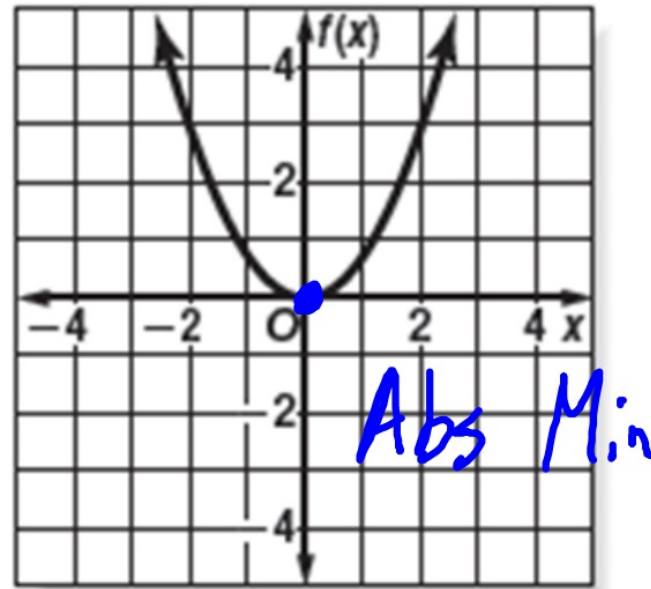
as  $x \rightarrow -\infty$ ,  $f(x) \rightarrow \infty$

as  $x \rightarrow \infty$ ,  $f(x) \rightarrow -\infty$

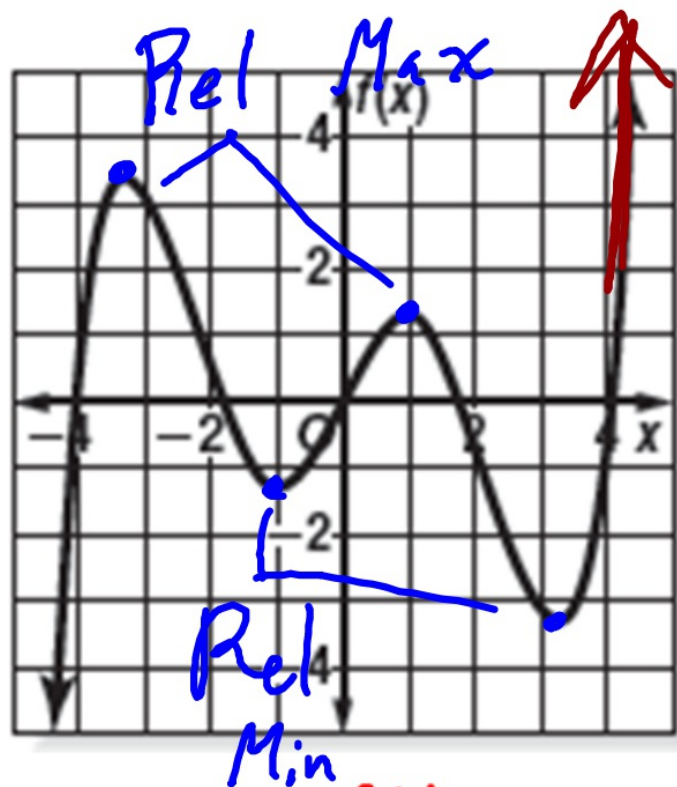
Label and classify each extrema and determine the end behavior for each graph:



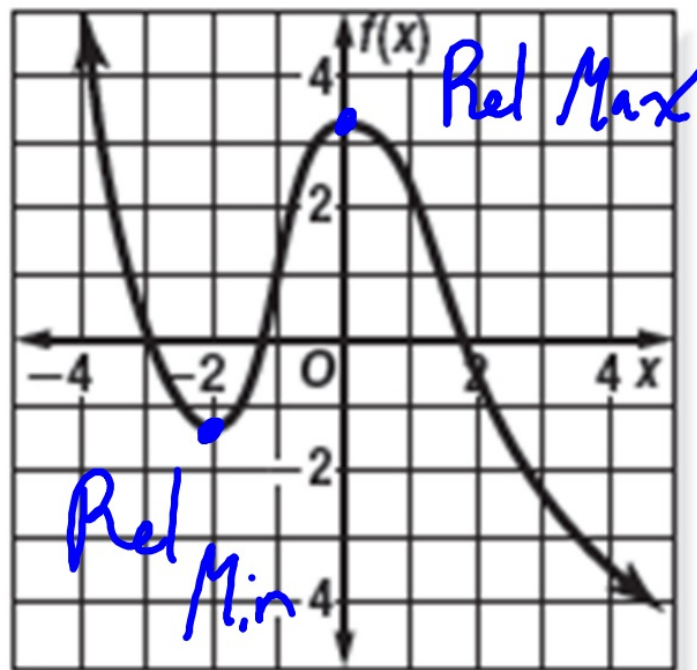
as  $x \rightarrow -\infty, f(x) \rightarrow \infty$   
as  $x \rightarrow \infty, f(x) \rightarrow \infty$



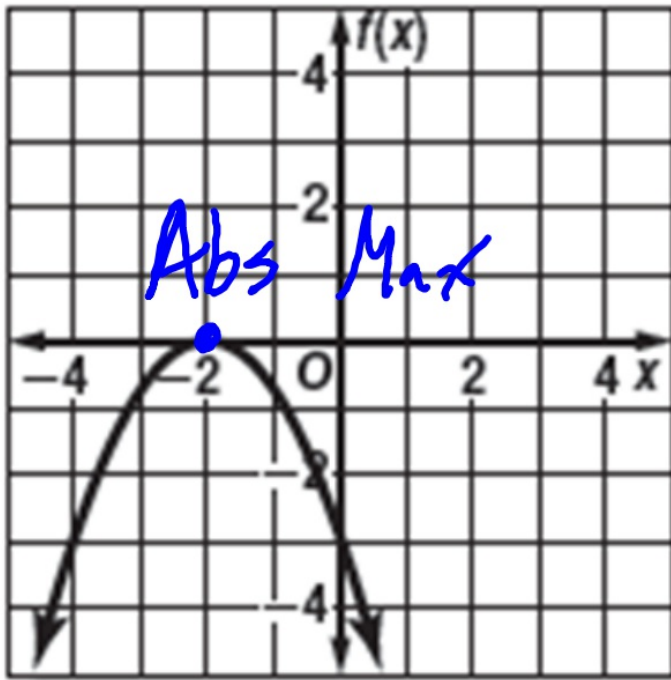
as  $x \rightarrow -\infty, f(x) \rightarrow \infty$   
as  $x \rightarrow \infty, f(x) \rightarrow \infty$



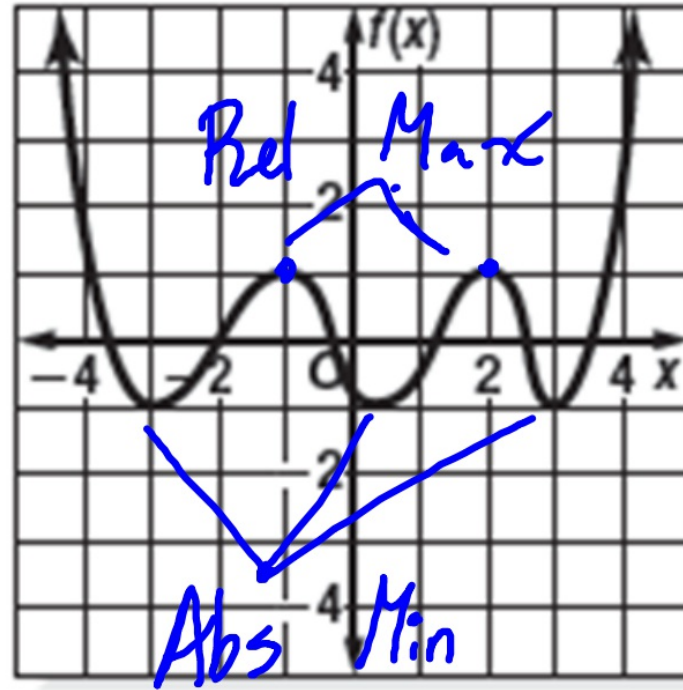
as  $x \rightarrow -\infty, f(x) \rightarrow -\infty$   
 as  $x \rightarrow \infty, f(x) \rightarrow \infty$



as  $x \rightarrow -\infty, f(x) \rightarrow \infty$   
 as  $x \rightarrow \infty, f(x) \rightarrow -\infty$



as  $x \rightarrow -\infty, f(x) \rightarrow -\infty$   
 as  $x \rightarrow \infty, f(x) \rightarrow -\infty$



as  $x \rightarrow -\infty, f(x) \rightarrow \infty$   
 as  $x \rightarrow \infty, f(x) \rightarrow \infty$

# Unit 5: Functions Quiz

**Type**

**Transformations**

**Interval Notation**

**Domain**

**Range**

**Pos / Neg Intervals**

**Inc / Dec Intervals**

**Assignment::**

**WB 507 #1-4**

**E.C. for All**