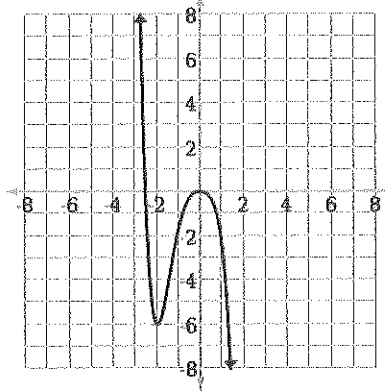


Name: Key Period: _____ Date: _____

5-4 HW Analyzing Graphs of Polynomial Functions

1. Given the graph of $f(x)$ to the right, estimate the following:



a) What is the relative minimum? Relative maximum?

-2 1

b) On what interval(s) of x is $f(x)$ decreasing?

$(-\infty, -2)$

c) On what interval(s) of x is $f(x)$ increasing?

$(-2, 1)$

d) How many turning points?

2

e) How many real zeros?

2 unique

2. Graph $f(x) = x^3 - 2x^2 - 5x + 6$ on your calculator fill in the table and sketch it to the right:

a) What is the relative maximum?

$(-0.7863, 8.2)$

Relative minimum?

$(1.277, -1.562)$

x	y
2	0
1	0
3	0
-0.786	8.2
1.277	-1.562

b) On what interval(s) of x is $f(x)$ increasing?

$(-\infty, -0.79)$ $(1.277, \infty)$

c) On what interval(s) of x is $f(x)$ decreasing?

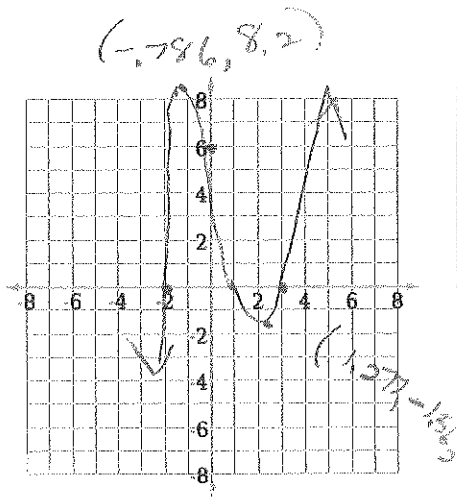
$(-0.79, 1.277)$

d) How many turning points?

2

e) How many real zeros?

3



3. Use the grid to sketch a polynomial function with the following characteristics:

- relative maxima at $(-2, 3)$ and $(4, 1)$
- relative minimum at $(0, 0)$
- degree = 4 with a negative leading coefficient

a) On what interval(s) is the graph increasing?

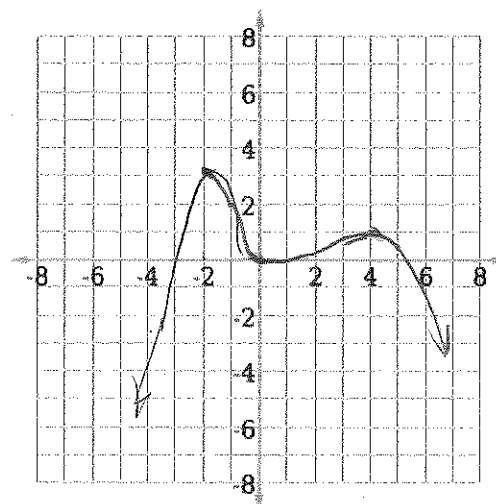
$$(-\infty, -2)$$

$$(0, 4)$$

b) On what interval(s) is the graph decreasing?

$$(-2, 0)$$

$$(4, \infty)$$



4. Use the grid to sketch a polynomial function with the following characteristics:

- relative maxima at $(0, 4)$
- relative minimum at $(2, 0)$
- degree = 3 with a positive leading coefficient

a) On what interval(s) is the graph increasing?

$$(-\infty, 0)$$

$$(2, \infty)$$

b) On what interval(s) is the graph decreasing?

$$(0, 2)$$

