

MATH 161 WORKOUT 12 NAME: \_\_\_\_\_

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[ Run: 10/28/2012 at 22:39. Order of Checkable Items: List.]

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**12-1.** Let  $f$  be the function specified by the *global input-output rule*:

$$x \xrightarrow{f} f(x) = x^2 + 4x - 21$$

Locate the input(s), if any, whose output is equal to 0.

**12-2.** Let  $f$  be the function specified by the *global input-output rule*:

$$x \xrightarrow{f} f(x) = x^2 + 10x + 21$$

Locate the input(s), if any, whose output is *negative*.

**12-3.** Let  $f$  be the function specified by the *global input-output rule*:

$$x \xrightarrow{f} f(x) = x^2 + 2x + 5$$

How many inputs have 0-height?

**12-4.** Let  $f$  be the function specified by the *global input-output rule*:

$$x \xrightarrow{f} f(x) = -4x^2 + 6x - 13$$

Where is Slope-sign = ( $\swarrow$ ,  $\nearrow$ )

- 12-5.** Let  $f$  be the function specified by the *global input-output rule*:

$$x \xrightarrow{f} f(x) = -4x^2 + 12x - 43$$

Where does the slope change sign?

- 12-6.** Let  $f$  be the function specified by the *global input-output rule*:

$$x \xrightarrow{f} f(x) =$$

Where is  $f$  *increasing*?

- 12-7.** Let  $f$  be the function specified by the *global input-output rule*:

$$x \xrightarrow{f} f(x) = -3x^2 + 5x - 17$$

Where is Concavity-sign = = ( $\cup$ ,  $\cup$ )?

- 12-8.** Let  $f$  be the function specified by the *global input-output rule*:

$$x \xrightarrow{f} f(x) = +x^2 - 3x - 15$$

Let  $g$  be the function specified by the *global input-output rule*:

$$x \xrightarrow{f} g(x) = -4x + 5$$

For how many input(s), if any, is  $f(x) = g(x)$ ?

- 12-9.** Let  $f$  be the function specified by the *global input-output rule*:

$$x \xrightarrow{f} f(x) = x^2 + x + 1$$

What is the global graph of  $f$ ?