

MATH 161 HOMEWORK 12 NAME: _____

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[Run: 08/24/2010 at 16:24. Seed: 6477. Order of Checkable Items: List.]

Response Grid:

Question	a	b	c	d	e
1					
2					
3					
4					
5					
6					

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

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

for which input(s), if any, is the output of f equal to 0?

Your Work:

i. Explain your reasoning in getting your result.

ii. Circle which of the following choices corresponds to your result.

a. -1 b. $+1$ c. $-1, +1$ d. No such input e. None of the preceding

iii. Check the corresponding box in the **Response Grid** on the front page.

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

$$x \xrightarrow{f} f(x) = +6x^2 + 12x + 24$$

for which input(s), if any, is the output of f *positive*?

Your Work:

i. Explain your reasoning in getting your result.

ii. Circle which of the following choices corresponds to your result.

- a. All inputs b. All inputs larger than -1 c. All inputs smaller than -1 d. No such input
e. None of the preceding

iii. Check the corresponding box in the **Response Grid** on the front page.

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

$$x \xrightarrow{f} f(x) = +6x^2 + 12x + 16$$

for which input(s), if any, is Slope-sign $f = (\searrow, \searrow)$?

Your Work:

i. Explain your reasoning in getting your result.

ii. Circle which of the following choices corresponds to your result.

- a. All inputs larger than -1 b. All inputs smaller than -1 c. All inputs larger than $+1$
d. All inputs larger than 0 e. None of the preceding

iii. Check the corresponding box in the **Response Grid** on the front page.

12-4. Given the function f whose global input-output rule is

$$x \xrightarrow{f} f(x) = +3x^2 - 6x - 7$$

near which input(s), if any, is the output of f *decreasing*?

Your Work:

i. Explain your reasoning in getting your result.

ii. Circle which of the following choices corresponds to your result.

- a. All inputs smaller than -1 b. All inputs larger than -1 c. All inputs larger than $+1$
 d. No such input e. None of the preceding

iii. Check the corresponding box in the **Response Grid** on the front page.

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

$$x \xrightarrow{f} f(x) = +63.12x^2 - 12.73x + 16.63$$

for which input(s), if any, is Concavity-sign $f = (\cup, \cup)$?

Your Work:

i. Explain your reasoning in getting your result.

ii. Circle which of the following choices corresponds to your result.

- a. -14.22 b. All inputs except -14.22 c. All inputs larger than -10.5 d. No such input
 e. None of the preceding

iii. Check the corresponding box in the **Response Grid** on the front page.

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

$$x \xrightarrow{f} f(x) = +32.44x^2 - 6.06x - 72.31$$

near which input(s), if any, is f *concave down*?

Your Work:

i. Explain your reasoning in getting your result.

ii. Circle which of the following choices corresponds to your result.

- a. All inputs smaller than -1 b. All inputs smaller than $+1$ c. All inputs larger than -1
d. No such input e. None of the preceding

iii. Check the corresponding box in the **Response Grid** on the front page.