

Intermediate Algebra

Name: _____

Study Guide 3

Class: _____

Due Date: _____

Score: _____

No Work \Leftrightarrow No Points

Use Pencil Only \Leftrightarrow Be Neat & Organized

1. Consider $f(x) = -3x - 2$ and $g(x) = x + 6$, Find:

(a) (2 points) $(f + g)(x)$

(a) _____

(b) (2 points) $(f - g)(x)$

(b) _____

(c) (2 points) $(f \bullet g)(x)$

(c) _____

(d) (2 points) $(f/g)(x)$

(d) _____

(e) (2 points) $(f - g)(1)$

(e) _____

2. Consider the function below:

$$f(x) = \begin{cases} -x^2 + 16 & \text{for } x < -1 \\ |x + 1| & \text{for } -1 \leq x \leq 1 \\ 5x - 10 & \text{for } x > 1 \end{cases}$$

Find:

(a) (2 points) $f(-4)$

(a) _____

(b) (2 points) $f(-1)$

(b) _____

(c) (2 points) $f(2)$

(c) _____

3. Consider the function below:

$$f(x) = \begin{cases} x^2 - 4 & \text{for } x < 0 \\ -\sqrt{x + 4} & \text{for } x \geq 0 \end{cases}$$

Find:

(a) (2 points) $f(-4)$

(a) _____

(b) (2 points) $f(-2)$

(b) _____

(c) (2 points) $f(0)$

(c) _____

(d) (2 points) $f(5)$

(d) _____

4. Consider $f(x) = x^2 + 4$ and $g(x) = x^2 - 4$, Find:

(a) (2 points) $(f + g)(x)$

(a) _____

(b) (2 points) $(f - g)(x)$

(b) _____

(c) (2 points) $(f \bullet g)(x)$

(c) _____

(d) (2 points) $(f/g)(x)$

(d) _____

(e) (2 points) $(f/g)(-2)$

(e) _____

(f) (2 points) $(f \bullet g)(-2)$

(f) _____

5. (2 points) Find the domain of the function $f(x) = \frac{2x - 7}{x + 7}$.

5. _____

6. Use this table to evaluate following function operations:

x	1	2	3	4	5	6
$f(x)$	3	1	4	2	2	5
$g(x)$	6	3	2	1	2	3

(a) (2 points) $(f - g)(3)$

(a) _____

(b) (2 points) $(f/g)(1)$

(b) _____

7. (2 points) Find the linear function that contains $A(-3,1)$ and $B(0,-6)$.

7. _____

8. Beginning Algebra Review Problems:

(a) (2 points) Factor $3x^2 - 2x - 5$.

(a) _____

(b) (2 points) Solve $5 - 4x \geq 0$, and express your final answer in interval notation.

(b) _____

(c) (2 points) Simplify $\frac{x^8}{x^3}$.

(c) _____