Name:		
MATH 101	"I hate Algebra."	. 1 . 11 . 0
Fall 2022		–John H. Conway
HW 8: Due 10/17		

Problem 1. (10pt) Determine whether the point (-6,-2) is on the graph of $f(x)=8-\frac{5}{3}x$. Determine also whether the point (12,-12) is on the graph of f(x). For each, explain why or why not.

Problem 2. (10pt) Suppose f(x) and g(x) are the functions given below.

x	-3	-2	-1	0	1	2	3
f(x)	4	2	0	-5	1	2	4
g(x)	2	1	-1	1	-2	3	-3
h(x)	-12	4	10	-2	4	-4	0

Compute the following:

(a)
$$(f+h)(-1) =$$

(b)
$$(h-g)(2) =$$

(c)
$$(5f)(2) =$$

(d)
$$\left(\frac{h}{g}\right)(-3) =$$

(e)
$$f(0) h(1) =$$

(f)
$$g(2-h(1)) =$$

(g)
$$(f \circ g)(-3) =$$

(h)
$$(g \circ h)(3) =$$

(i)
$$(h \circ g)(3) =$$

(j)
$$(f \circ g \circ h)(0) =$$

Problem 3. (10pt) Suppose f(x) and g(x) are the functions given below.

$$f(x) = 2 - x$$

$$g(x) = x^2 - 3x + 2$$

Compute the following:

(a)
$$f(-4) =$$

(b)
$$g(2) =$$

(c)
$$2f(1) - g(3) =$$

(d)
$$f(x) - g(x) =$$

(e)
$$f(x) g(x) =$$

(f)
$$\left(\frac{f}{g}\right)(x) =$$

(g)
$$(f \circ g)(0) =$$

(h)
$$(g \circ f)(0) =$$

(i)
$$(f \circ g)(x) =$$

(j)
$$(g \circ f)(x) =$$

Problem 4. (10pt) Suppose f(x) and g(x) are functions.

- (a) Explain what it means for f(2)=g(2) graphically.
- (b) Explain what f(x) and g(x) intersecting at the point (-1,7) means algebraically.