WS #3.5 Solutions

Math 109 College Algebra
Lecturer: Calvin Hotchkiss
Group Worksheet 3.5

Fall 2024
TA: Samir Donmazov

Indicate which group member is taking on which of the following four roles. You will switch roles on the next recitation day.

- Reader: Reads the problem to the group and makes sure everyone understands.
- Spokesperson: presents the work and asks questions to the TA.
- Recorder: writes everyone's names and the group's work on the worksheet.
- Timekeeper: keeps track of time.
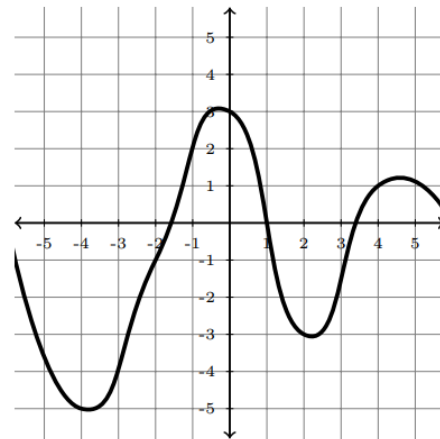
Reader's name: _____

Spokesperson's name: _____

Recorder's name: _____

Timekeeper's name: _____

In this worksheet, you need to solve problem 3 part (a), and parts (a) and (b) of problem 5.

(1) Suppose $f(x)$ is given by the graph to the right.

(2) Let $g(x)$ be defined by $g(x) = 13$.

(3) Let $h(x)$ be defined by $h(x) = \dfrac{2x-1}{x+1}$.

   (a) Solve $h(x) = 3$.

$$\frac{2x-1}{x+1} = 3 \implies 2x-1 = 3(x+1) \implies 2x-1 = 3x+3$$

$$\boxed{x = -4}$$

(4) Let $j(x)$ be defined by the table to the right.

x	j(x)
-1	8
2	5
5	-1
8	2

(5) Let $f(x)$, $g(x)$, $h(x)$, and $j(x)$ be defined as they were in problems (1) through (4).

(a) Evaluate $3f(-4) - g(3)$ $= 3 \cdot (-5) - 13 = -15 - 13 = -28$

$\underbrace{}$ $= -5$

$\underbrace{}$ $= 13$

↑ from the graph

↑ constant function

(b) Evaluate $\dfrac{\overbrace{j(5)}^{\substack{-1 \\ =}}}{\underbrace{h(-2)}_{=5}} = -\dfrac{1}{5}$

$h(-2) = \dfrac{2 \cdot (-2) - 1}{-2 + 1} = \dfrac{-5}{-1} = 5 .$