Recitation Group Activity Workheet#1

Algebra Review Questions

1) Rationalize the denominator and simplify. Write down the steps for solving this problem also.

$$\frac{x-3}{\sqrt{x}-\sqrt{3}}$$

2) Solve the inequality and graph the solution on the number line.

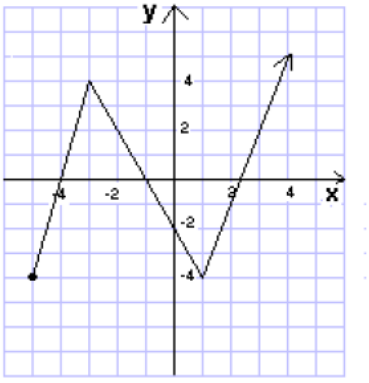
$$|3x-4| \geq 3$$

3) Given f(x) define by the table below left, and g(x) defined by the graph below right:

$f(x)$ defined by

x	f(x)
−1	3
0	1
1	−2
2	−3

$g(x)$ defined by the graph below:



Find

a) $f(2)$
b) $(f \circ g)(2)$
c) $g(f(1))$

4) Given $f(x)=\frac{5x}{x+1}$, find and simplify $\frac{f(x+h)-f(x)}{h}$.

Hint: f(x+h) means plug in (x+h) whenever you see x in the original f(x) function.

5) Find the domain of f(x) and express your answer using interval notation such as (1, 8), [-2,10) etc. You must show your analysis to receive full credit.

$$f(x) = \sqrt{\frac{x+3}{x-4}}$$

6)

$$\text{Given } f(x) = \begin{cases} x+1 & \text{if } x < 0 \\ x^2 - 1 & \text{if } 0 \le x < 2 \\ 4 & \text{if } x \ge 2 \end{cases}$$

a) Evaluate the following: f(-2), f(2), f(10)
b) Provide a rough sketch of the function by observing the transition points (points where f changes its behavior at its *pieces*)
c) What is the type/name of this function? **Hint**: look at part b to find its name.