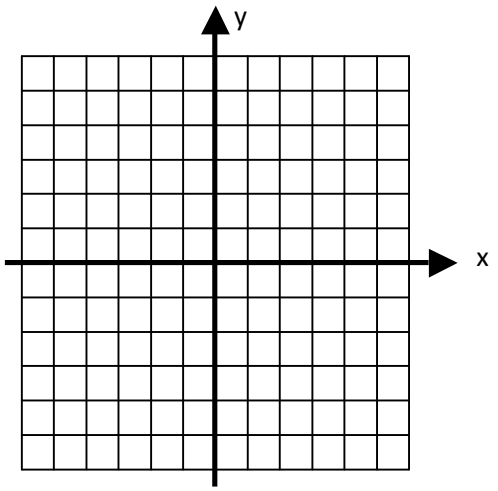
# HOMEWORK: PIECEWISE FUNCTIONS

NAME: _____ DAY 4 DUE: _____

To graph, graph each "piece" of the function. Watch the inequality sign to see if you need an open dot or a closed dot!

1) Graph: $f(x)=\begin{cases}-x-4, & x<-1\\ 2x+2, & x\geq -1\end{cases}$




a. Find $f(-3)$. _____

b. Find $f(0)$. _____

c. Increasing on _____

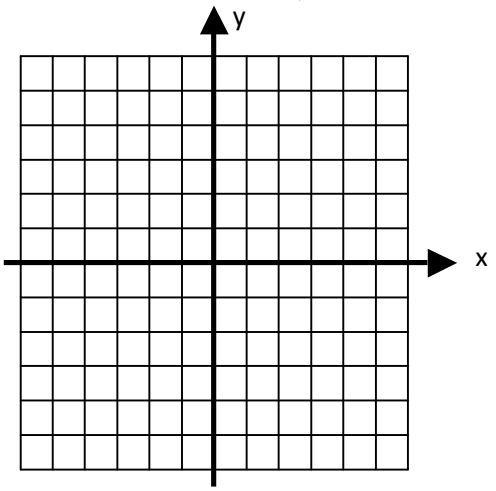
d. Decreasing on _____

e. Constant on _____

f. Domain: _____

g. Range: _____

2) Graph: $f(x)=\begin{cases}x, & x<-1\\ x+1, & -1\leq x\leq 1\\ -1, & x>2\end{cases}$




a. Find $f(-2)$. _____

b. Find $f(1)$. _____

c. Find $f(4)$. _____

d. Increasing on _____

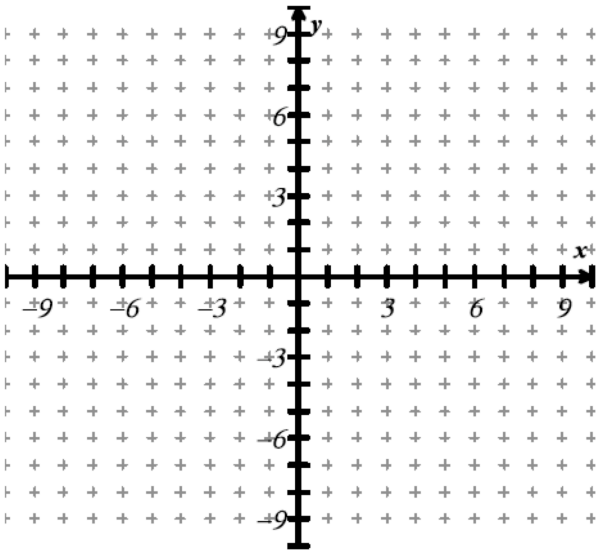
e. Decreasing on _____

f. Constant on _____

h. Domain: _____

i. Range: _____

3) Given $f(x)=\begin{cases}\frac{1}{2}x+4, & x<-2\\ x^2-1, & -2\le x\le 2\\ -1, & x>2\end{cases}$



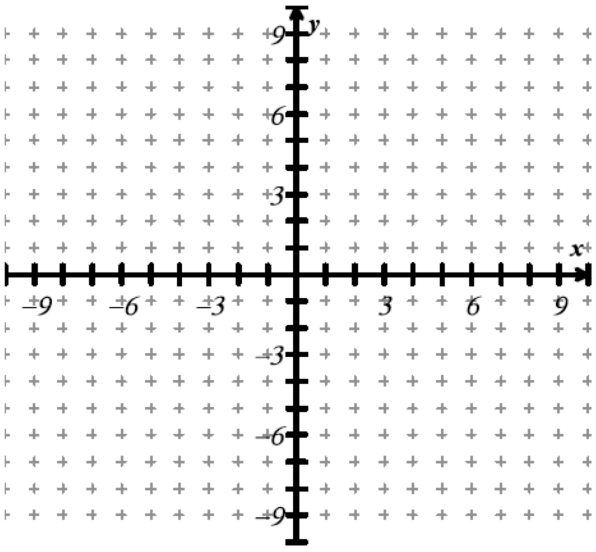

a) Find $f(-4)$. _____

b) Find $f(2)$. _____

c) Find $f(3)$. _____

d) Graph the function.

4) Given $f(x)=\begin{cases}|x+2|, & -6\le x\le 0\\ \sqrt{x}, & 0<x\le 1\\ -2x+5, & 1<x<5\end{cases}$




a) Find $f(-3)$. _____

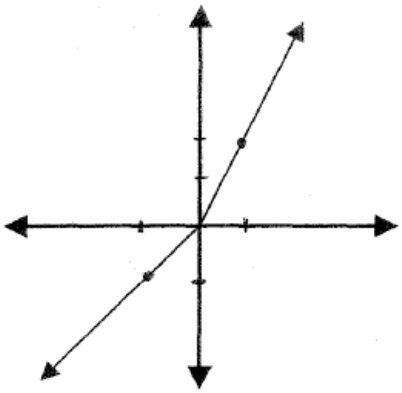
b) Find $f(0)$. _____

c) Find $f(3)$. _____

d) Graph the function.

**Write the piecewise function given by the graph.**

5.



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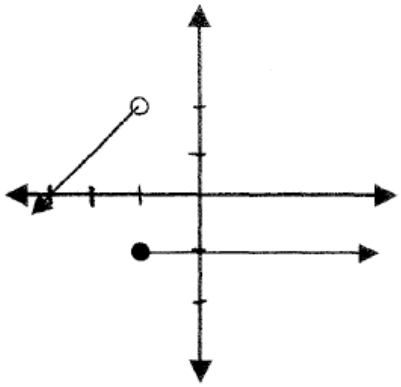

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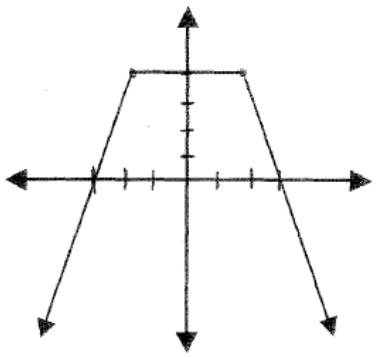

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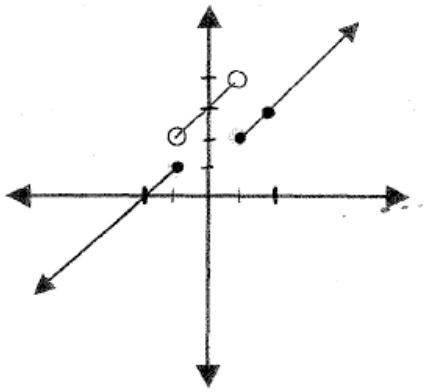
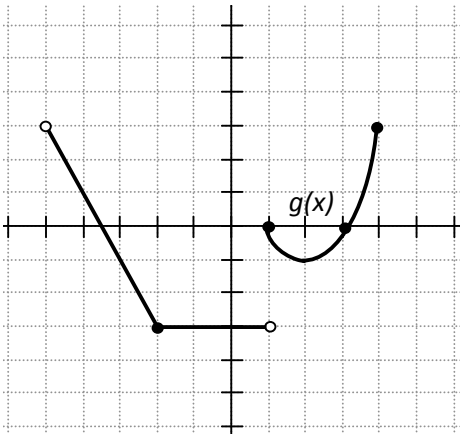


9. The graph of a piecewise-defined function is given. Write a definition the function.




10. Sprint PCS offers a monthly cellular phone plan for $39.99. It includes 350 anytime minutes plus $0.25 per minute for additional minutes. The following function is used to compute the monthly cost for a subscriber:

$$C(x)=\left\{\begin{array}{ll} 39.99, & 0<x\le 350 \\ 0.25x-47.5, & x>350 \end{array}\right\},$$

where x is the number of additional minutes used

a) Find the monthly cost for 200 anytime minutes.

b) Find the monthly cost for 365 anytime minutes.