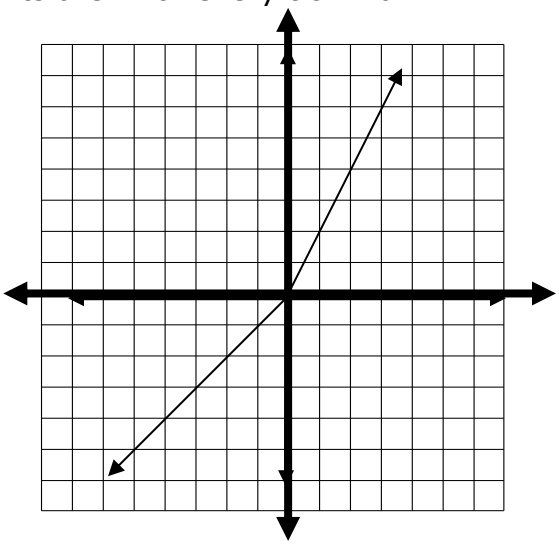
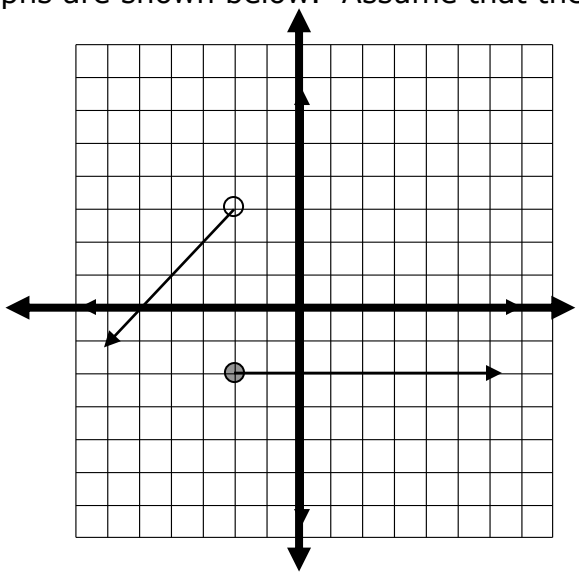
Piecewise Functions Homework

Write equations for the piecewise functions whose graphs are shown below. Assume that the units are 1 for every tick mark.

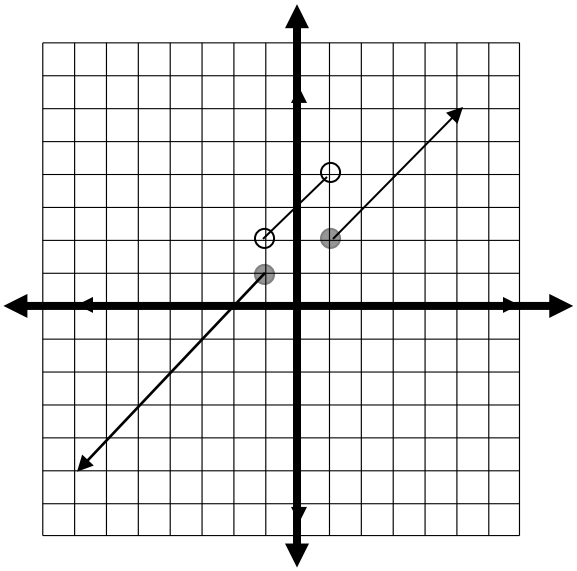
1.



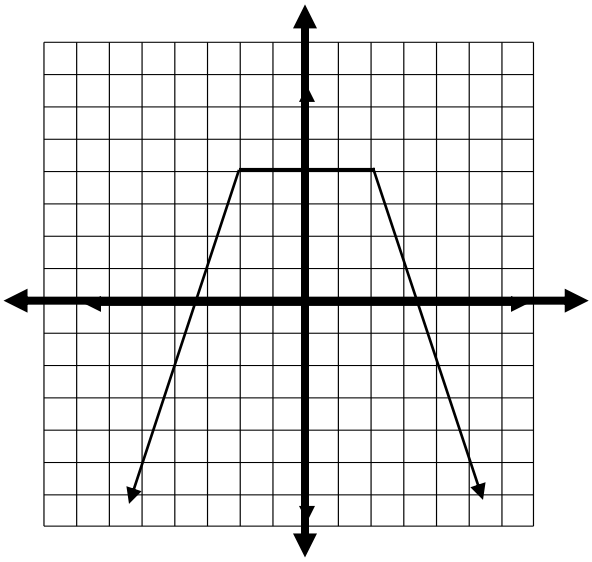
2.



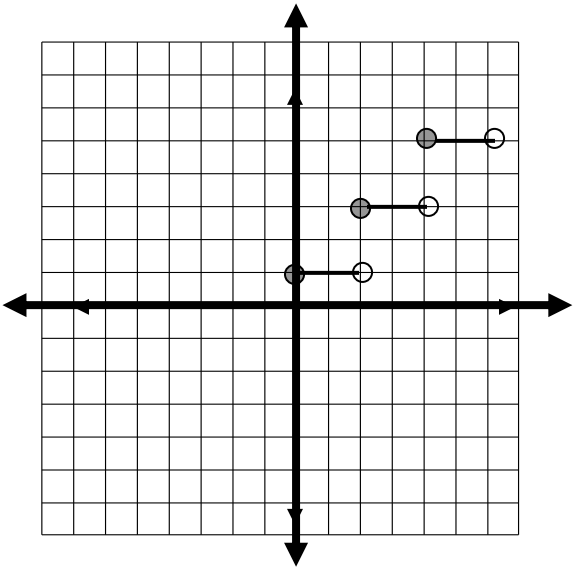
3.



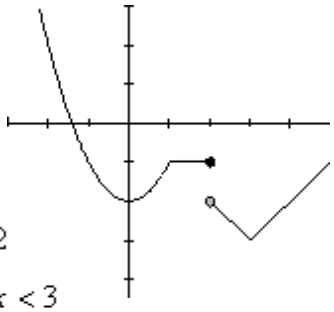
4.



5.



6. Which of the following piecewise functions is represented by this graph?



a. $f(x)=\begin{cases} x^2-2 & x\le 1 \\ -1 & 1<x<2 \\ |x-3|-3 & x\ge 2 \end{cases}$

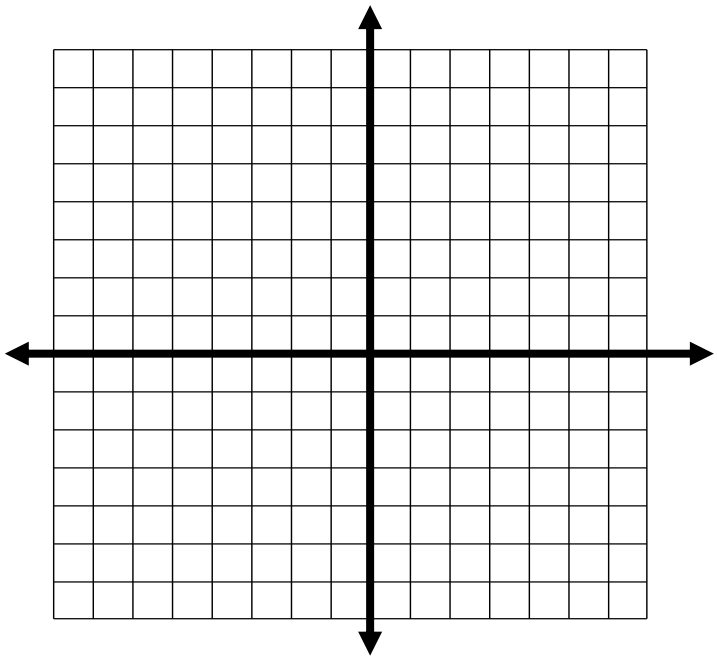
c. $f(x)=\begin{cases} x^2-2 & x\le -2 \\ -1 & -2<x<3 \\ |x-3|-3 & x\ge 3 \end{cases}$

b. $f(x)=\begin{cases} x^2-2 & x\le -2 \\ -1 & -2<x\le 3 \\ |x-3|-3 & x>3 \end{cases}$

d. $f(x)=\begin{cases} x^2-2 & x\le 1 \\ -1 & 1<x\le 2 \\ |x-3|-3 & x>2 \end{cases}$

7. Graph the following piecewise function and then answer questions relating to it.

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



Find the following values:

f(6) =

f(-4) =

f(0) =

f(3) =

What is the absolute maximum? The absolute minimum?

Find the interval(s) on which the function is increasing.

Find the interval(s) on which the function is decreasing.

Find the interval(s) on which the function is constant.

Where is the function discontinuous?

What is the rate of change on the interval (-6, -4)?