Name: _____ Date: _____

Graphing Piecewise Functions

1. Evaluate $f(x)=\begin{cases} x+2 & x<2 \\ 2x+1 & x\geq 2 \end{cases}$ when:

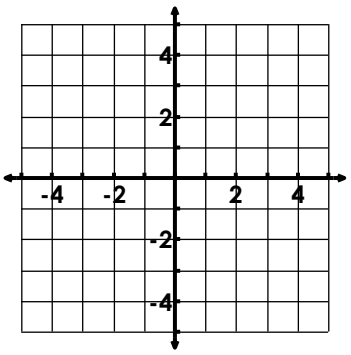
   a. $x=0$ b. $x=2$ c. $x=4$

2. Graph: $f(x)=\begin{cases} x+1 & x<-1 \\ -x+3 & x\geq -1 \end{cases}$

Domain:

Range:

Point of Discontinuity:

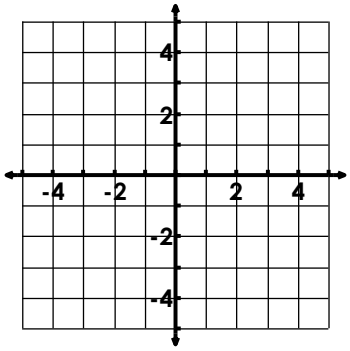


3. Graph: $f(x)=\begin{cases} 2x-3 & x>-1 \\ -2x+1 & x\leq -1 \end{cases}$

Range:

Point of Discontinuity:

Increasing:

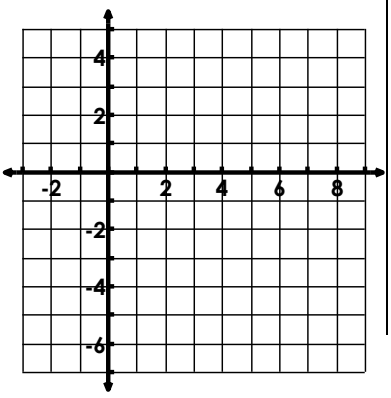


4. Graph: $f(x)=\begin{cases} x & -1\leq x<3 \\ x-1 & 3\leq x<5 \end{cases}$

Domain:

Range:

Point of Discontinuity:

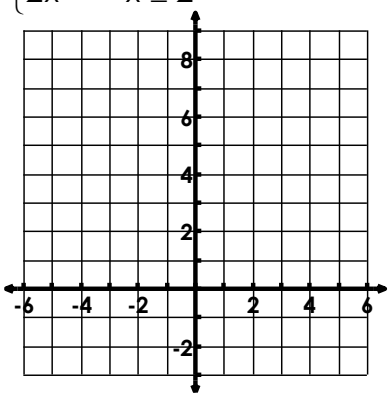


5. Graph: $f(x)=\begin{cases} -x & x<-1 \\ -2 & -1\leq x<2 \\ 2x & x\geq 2 \end{cases}$

Domain:

Range:

Point of Discontinuity:



6. Graph: $f(x)=\begin{cases} -x^2 & x<2 \\ x+3 & x\geq 2 \end{cases}$

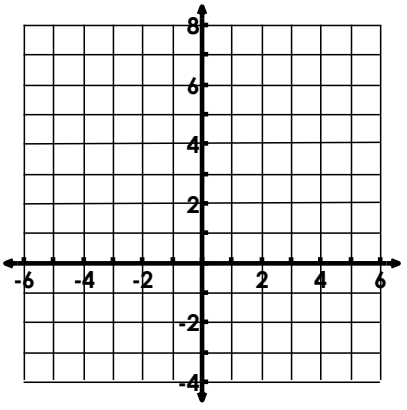
Domain:

Inc:

Range:

Dec:

Point of Discontinuity:



Step Functions

7. You are making class t-shirts. A company charges $5 per shirt if you order less than 100 shirts, $4 per shirt between 100-300 shirts, and $3 per shirt for orders over 300. Write a piecewise equation to represent the situation.

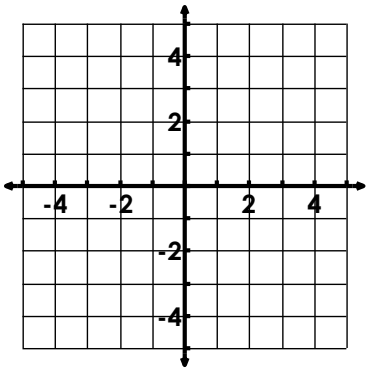
8. You are making class tattoos for the pep rally. There is a $10 set up fee for the design. Tattoos cost $1 per tattoo if you order 200 or less tattoos, $0.50 per tattoo for orders over 200. Write a piecewise function to show the price based on the tattoo.

9. You start tutoring elementary students in math, and you schedule a month at a time. You charge $20 an hour for less than 3 hours, and $15 an hour for 3 or more hours. Write a piecewise function to show the rates based on the hours, and determine how much you would make if you tutored for 4 hours.

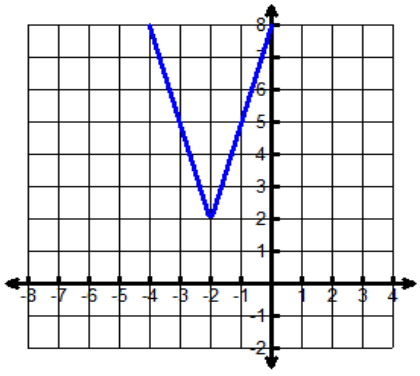
10. Graph: $f(x) = \begin{cases} -3 & -5 \le x < -3 \\ -1 & -3 \le x < -1 \\ 1 & -1 \le x < 2 \\ 3 & 2 \le x < 5 \end{cases}$

Domain:

Constant:



11. Given the graph, determine the piecewise function (include the domain restriction):



$f(x) = \begin{cases} \_\_\_\_\_ \\ \_\_\_\_\_ \end{cases}$