Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.4 Practice

***In problems #1-4, a) graph each function, b) locate any intercepts, c) state the domain, d) state the range.***

1. $f\left(x\right)=\left\{\begin{array}{c}3x if x\ne 0\\4 if x=0\end{array}\right.$ 2. $f\left(x\right)=\left\{\begin{array}{c}x^{2} if x<0\\2 if x=0\\2x+1 if x>0\end{array}\right.$

3.$ f\left(x\right)=\left\{\begin{array}{c} \frac{1}{x} if x<0\\\sqrt[3]{x} if x\geq 0\end{array}\right.$ 4.$ f\left(x\right)=\left\{\begin{array}{c}3+x if-3\leq x<0\\5 if x=0\\\sqrt{x} if x>0\end{array}\right.$



***5. Graph*** $f\left(x\right)=int(2x)$

***In problems #6-7, the graph of the piecewise-defined function is given. Write a definition for each function.***

6. 7. 

8. In May 2003, the Peoples Gas Company had the following rate schedule for natural gas usage in single-family residences:

 Monthly service charge $9.45

 Per them service charge:

 1st 50 therms $0.36375/therm

 Over 50 therms $0.11445/therm

 Gas charge $0.6338/therm

***a) What is the charge for using 50 therms in a month?***

***b) What is the charge for using 500 therms in a month?***

***c) Construct a function that relates the monthly charge C for x therms of gas.***