

## Step Functions Worksheet

1) Rewrite  $f(x) = \llbracket x \rrbracket$  as a piecewise linear function from  $6 \leq x < 8$ .

2) Evaluate

a)  $\llbracket 5.7 \rrbracket =$

c)  $\llbracket 3\pi \rrbracket =$

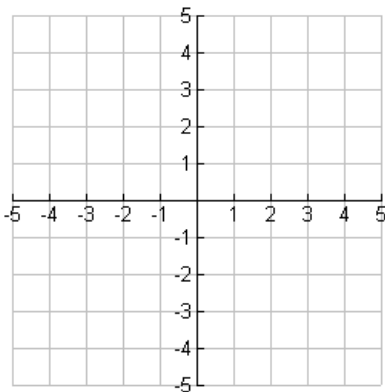
e)  $\llbracket 0.2 \rrbracket =$

b)  $2\llbracket \sqrt{5} \rrbracket =$

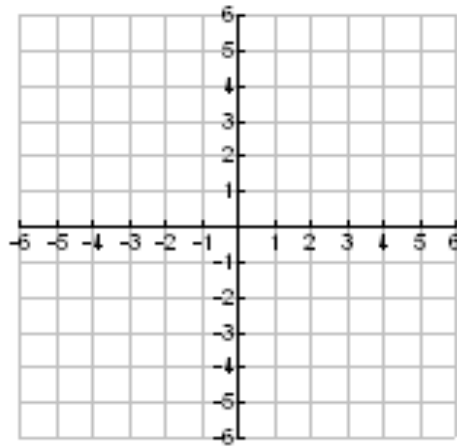
d)  $\llbracket -6.1 \rrbracket =$

f)  $5\llbracket -9.1 \rrbracket =$

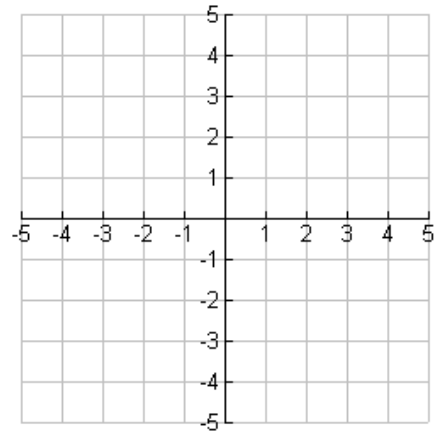
3) Sketch the graph of  
 $f(x) = \llbracket x \rrbracket$  from  $-4 \leq x < 4$



4) Sketch the graph of  
 $f(x) = 3\llbracket x \rrbracket$  from  $-2 \leq x < 2$



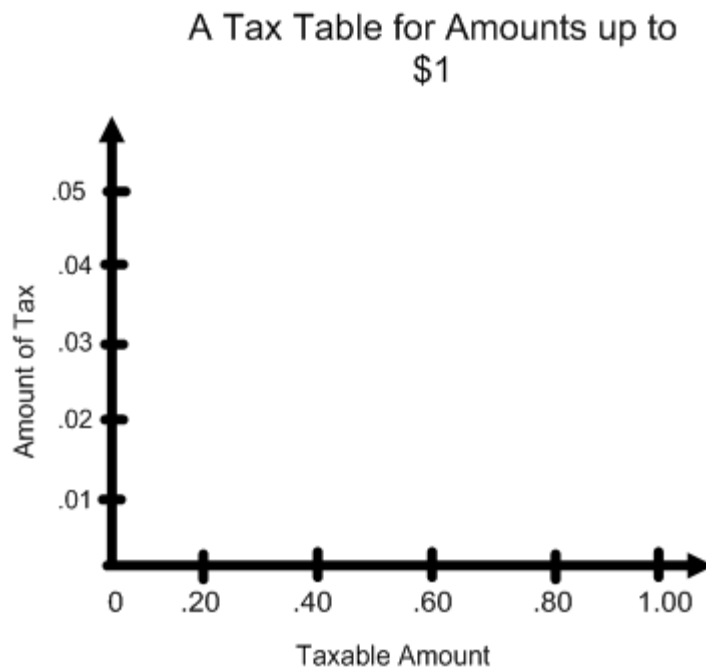
5) Sketch the graph of  
 $f(x) = 2 - \llbracket x \rrbracket$  from  $0 \leq x < 5$



You are selling candy bars. The taxable amounts and tax imposed up to \$1 are shown below.

- For amounts between \$0.01 and \$0.20, the tax is \$.01.
- For amounts greater than \$0.20 and less than or equal to \$0.40, the tax is \$0.02.
- For amounts greater than \$0.40 and less than or equal to \$0.60, the tax is \$0.03.
- For amounts greater than \$0.60 and less than or equal to \$0.80, the tax is \$0.04
- For amounts greater than \$0.80 and less than or equal to \$1.00, the tax is \$0.05.

6) Complete the graph to show the tax imposed on the candy bars.



Use the graph to answer the following questions:

- 7) A candy bar costs \$0.55. What is the total cost with tax?
- 8) Your aunt purchased three candy bars at \$0.55 a piece. What is the total cost with tax?
- 9) Someone purchased 4 candy bars at \$0.55 a piece. They gave you \$2 and a quarter. Is this enough money to cover the candy bars and the tax? Explain your answer.