Step Functions Worksheet

1) Rewrite \( f(x) = \lfloor x \rfloor \) as a piecewise linear function from \( 6 \leq x < 8 \).

2) Evaluate
   
   a) \( \lfloor 5.7 \rfloor = \)  
   b) \( 2\lfloor \sqrt{5} \rfloor = \)  
   c) \( \lfloor 3\pi \rfloor = \)  
   d) \( \lfloor -6.1 \rfloor = \)  
   e) \( \lfloor 0.2 \rfloor = \)  
   f) \( 5\lfloor -9.1 \rfloor = \)  

3) Sketch the graph of \( f(x) = \lfloor x \rfloor \) from \( -4 \leq x < 4 \)

4) Sketch the graph of \( f(x) = 3\lfloor x \rfloor \) from \( -2 \leq x < 2 \)

5) Sketch the graph of \( f(x) = 2 - \lfloor x \rfloor \) 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.

A Tax Table for Amounts up to $1

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.