

Step Functions Worksheet

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

2) Evaluate

a) $\lfloor 5.7 \rfloor =$

c) $\lfloor 3\pi \rfloor =$

e) $\lfloor 0.2 \rfloor =$

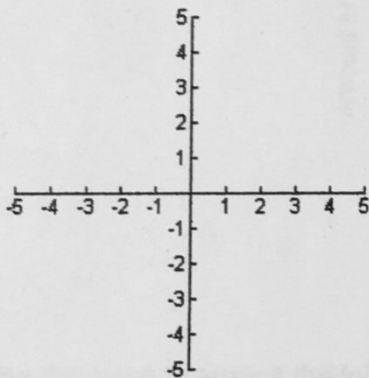
b) $2\lfloor \sqrt{5} \rfloor =$

d) $\lfloor -6.1 \rfloor =$

f) $5\lfloor -9.1 \rfloor =$

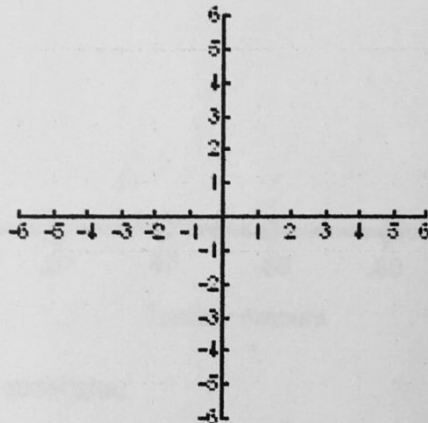
3) Sketch the graph of

$$f(x) = \lfloor x \rfloor \text{ from } -4 \leq x < 4$$



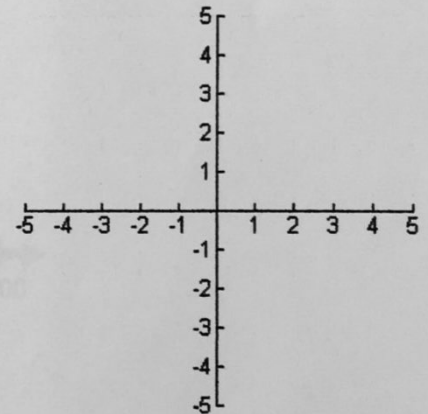
4) Sketch the graph of

$$f(x) = 3\lfloor x \rfloor \text{ from } -2 \leq x < 2$$



5) Sketch the graph of

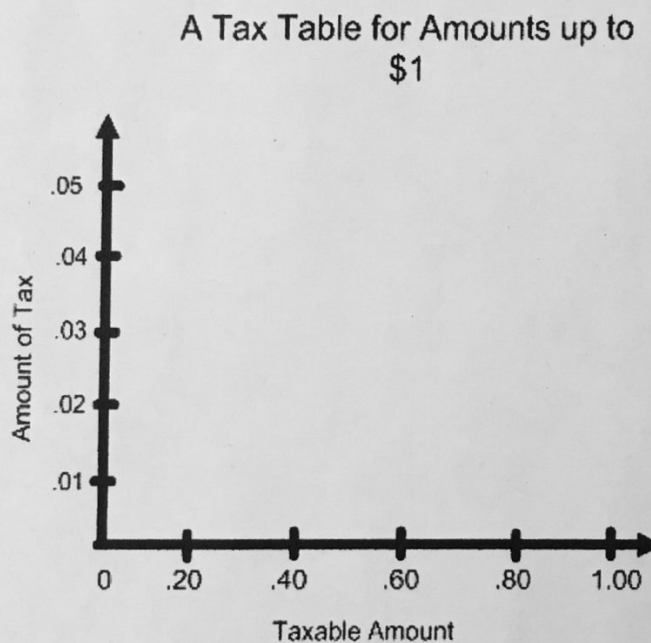
$$f(x) = 2 - \lfloor x \rfloor \text{ from } 0 \leq x < 5$$



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.