1-3 Notes Piecewise Functions   Name _____
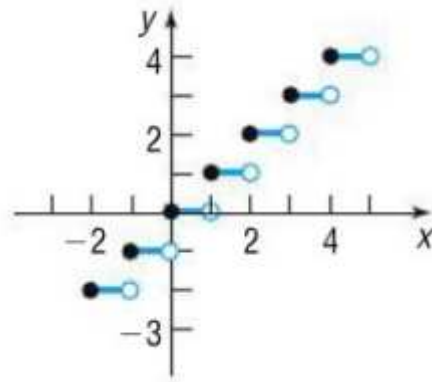Pre-Calculus

I. Step Function
   - A function whose graph is defined by the greatest integer function {birthday function}
   Greatest Integer Function

$$f(x) = [\![x]\!] = \text{greatest integer less than or equal to } x$$

   To graph this function, start by building a table of x values. Make sure to include negatives and fractions. Use the above definition to determine the output value of f(x).
      table:

         Is this a function?   Is it continuous or discontinuous?

Continuous: a function in which its graph has no gaps or holes in it. It can be drawn without lifting your pencil from the paper.
Discontinuous: a function in which its graph has holes or breaks in the curve. To draw this graph you would need to lift your pencil off the paper.

II. Piecewise Function
   - A function that is defined by different formulas on different parts of the domain
   Graph:

$$f(x) = \begin{cases} -2x + 1 & if -3 \le x < 1 \\ 2 & if\ x = 1 \\ x^2 & if\ x > 1 \end{cases}$$

   Find f(-2)
      f(1)
      f(2)

   What is the domain? range?

   Intercepts:

   Is f continuous over its domain?