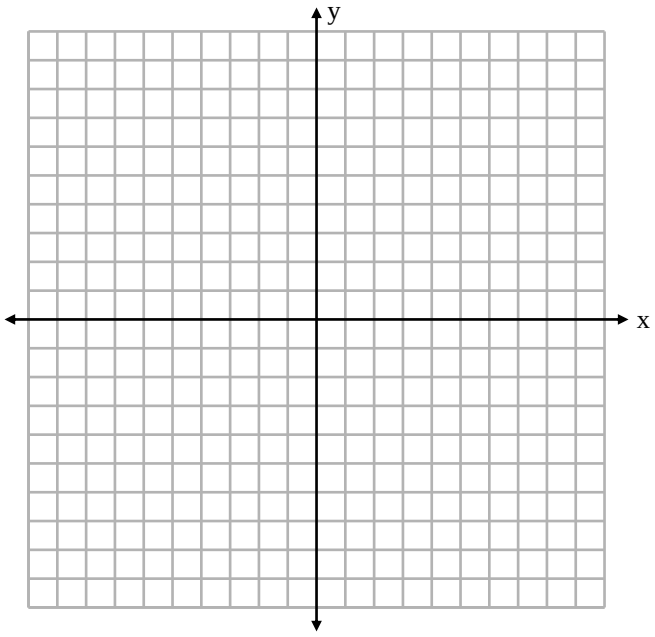
MTH 161, Quiz #1, Spring 2021 Name _____

**Instructions**: Show all work. Use exact answers unless otherwise asked to round.

1. Sketch the graph of the function $f(x) = \begin{cases} 2x - 1, & x < 2 \\ -\frac{1}{2}x^2, & x \geq 2 \end{cases}$




2. For the function above, find the following:
   a. Any symmetry of the function.

   b. The intervals on which the graph is increasing, decreasing or constant.

   c. Any relative maxima or minima.

   d. The domain and range.

3. For the relation below, determine i) the domain and range, ii) if the relation is a function, iii) if it is a function, find the inverse.