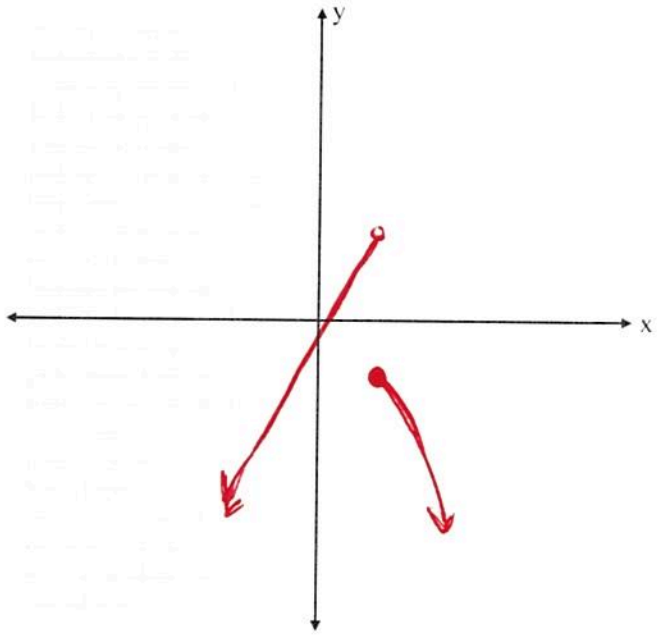
MTH 161, Quiz #1, Spring 2021 Name KEY

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.

none

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

increasing: $(-\infty, 2)$ decreasing: $[2, \infty)$ or $(2, \infty)$

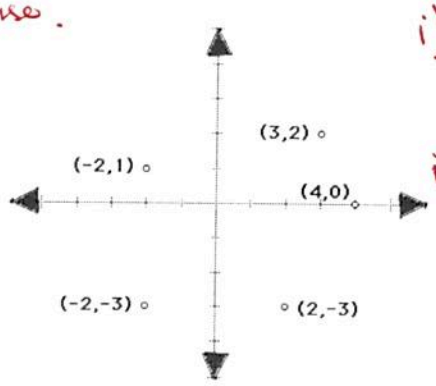
   c. Any relative maxima or minima.

none

   d. The domain and range.

D: $(-\infty, \infty)$ R: $(-\infty, 3)$

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 inverse.



i) D: $\{-2, 3, 2, 4\}$
R: $\{-3, 0, 1, 2\}$

ii) not a function