# Precalculus Section 1.2 Exercises

1. Graph the following relations.

   (a) $\{(x, y) \mid -2 \geq x < 2\}$

   (b) $\{(x, y) \mid 1 \leq x \leq 3, -1 \leq y \leq -3\}$

   (c) $\{(x, -x) \mid x \in \mathbb{Z}\}$

2. Using one set of axes, graph the lines $x = 2$, $y = -2$, $x = 3$ and $y = -3$. Label each line with its equation.

3. For each of the following equations,

   - Find the $x$- and $y$-intercept(s) of the graph, if any exist.
   - Test for symmetry.
   - Create a table of sample points on the graph of the equation.
   - Plot the sample points and create a rough sketch of the graph of the equation.

   (a) $y = 3\sqrt{x - 4} + 2$

   (b) $(x - 2)^2 + y^2 = 25$

   (c) $(x^2 + y^2)^2 = 4(x^2 - y^2)$

   (Hint for (c): to generate sample points, only plug in values of $x$ between $-2$ and 2.)