PRE-CALCULUS REVIEW, Part 1
Concepts/Skills to know:

- Define a number **greater than >** another number as the first number being to the right of the second number on the number line *and*
  define a number **less than <** another number as the first number being to the left of the second number on the number line.

- Understand why the inequality sign **flips/switches** if multiplying (or dividing) by negative one (-1).

- Define **absolute value** of a number as the number's distance from zero *and*
  evaluate expressions, solve equations and solve inequalities each having absolute values.

- Use interval notation:
  (a, b) is an **open interval** which does not include the numbers a or b (open circles)
  [a, b] is a **closed interval** which does include the numbers a and b (closed circles)
  [a, b) and (a, b] are **half-open intervals**.

- Sketch graphs of **inequalities** on a number line.

- Find the **distance** between two given points in the coordinate plane (hint: Pythagorean Theorem) *and*
  find **area** of right triangles and of squares in the coordinate plane given coordinates of vertices.

- Define **rate** as a division of two numbers having different units *and*
  identify **slope** as a rate (and ratio).

- Use **slope formula** $\left| m = \dfrac{y_2 - y_1}{x_2 - x_1} \right|$ to find a **linear equation** of the line passing through $(x_1.y_1)$ and (x_2, y_2).

- Identify the slopes of **perpendicular** lines ⊥ (opposite and reciprocal slopes, i.e., their product is -1)
  and slopes of **parallel** lines // (same slopes).

- Solve **quadratic** equations, **ax²+bx+c=0**, by **factoring** and by **quadratic formula** $\left| x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a} \right|$
  and give answers as exact (not rounded) and approximate (when applicable).

- Graph equations on **Graphing Calculator**.