Read each problem **very carefully** before starting to solve it. Each problem is worth 5
points. It is necessary to show **all** your work. Correct answers without explanations are
worth 0 points. GOOD LUCK!!

1. Suppose the perimeter of a rectangular sign is 44 cm and the width is 2 cm shorter than half
   the length. We would like to find the dimensions of the sign.

    (a) Introduce variables and state explicitly what they stand for.

    (b) Use the variables to write equation(s) reflecting the data.

    (c) Solve the equation(s) to determine the dimensions of the sign.

2. Alex lent his sister Barbara and his brother Clark a total of $200. Barbara agreed to a 6%
   interest rate on her loan and Clark negotiated a 5% interest rate. If Alex's return was $ 11.2
   how much did each of his siblings borrow?

3. Solve the linear inequality
$$\frac{1}{3}x - \frac{15}{2} \leq \frac{11}{2}x + \frac{17}{6}.$$
Write your answer in interval notation.