## EXAM 1 - MATH 102 YOUR NAME:

Read each problem **very carefully** before starting to solve it. Each problem is worth 10 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Solve the equation

$$\frac{x+7}{3} - \frac{x-2}{5} = \frac{7}{3} - \frac{x}{15}$$

2. If the perimeter of a rectangular sign is 43 cm and the width is 2.5 cm shorter than half the length, what are the length and the width of the sign?

3. A commuter bus takes 2 hours to get downtown; an express bus, averaging 25 mph faster, takes 45 minutes to cover the same route. What is the average speed of the commuter bus?

4. (a) Solve the compound inequality

2x - 9 < 5 or  $-4x \ge 12$ .

(b) Express the solution set in interval notation and graph it.

5. Solve the absolute value equation

$$-5 \cdot |5x - 7| + 4 = -11$$