

YOUR NAME: _____

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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 $\frac{1}{2} \left(x - \frac{1}{3} \right) + \frac{1}{6} = \frac{5}{6} + \frac{1}{3} \left(\frac{1}{2}x - 3 \right)$.

2. Barbara rode her bicycle for 5 hours. Because of some mechanical problems, she then had to walk the bicycle for 3 hours to the nearest town. Altogether, she covered 85 miles. If she rides at 9 mph faster than she walks, how far did she walk?

3. Solve the **compound inequality**, write in interval notation and graph the solution set:

$$7 - 2x \geq 17 \quad \text{or} \quad 5x - 18 > 2(x - 4) - 5;$$

4. Solve the absolute value inequality $1 > \frac{1}{2}|6 - x| - \frac{3}{4}$; Please, write your answer in interval notation and graph the solution set.

5. Find the y -intercept of the line l that passes through the point $(45, -2)$ and is perpendicular to the line l' with equation $x - 2y = -2$;