EXAM 1 - MATH 102

YOUR NAME:_____

Friday, February 7

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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

$$\frac{x+1}{4} - \frac{x-1}{6} = \frac{x}{3} + 5.$$

2. Solve the absolute value inequality and graph the solution set:

$$1 - 3|x - 2| < -2.$$

3. Find an equation for the line ℓ that passes through the point $(2,3)$ and is perpendicular to the line ℓ', with equation $3x - 5y = 7$.

4. Sketch the graph of the inequality in two variables $2y + x > 6$.

5. Tickets for a concert were $3 for adults and $2 for students. Twice as many adults as students attended the concert and the total receipts were $824.

    (a) Introduce variables, **explicitly** and **accurately** stating their meanings, and write down two equations that reflect the data.

    (b) Solve the system of equations to find how many of each type of tickets were sold.