EXAM 2 - MATH 102 Friday, October 10

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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. Use the addition (elimination) method to solve the system $\left\{ \begin{array}{rcr} x+y+z & = & 4 \\ 5x+y+3z & = & -4 \\ 2x-y+z & = & -9 \end{array} \right\}$.

2. Solve the system $\left\{ \begin{array}{rcr} 2x+10y & = & 14 \\ -x+2y & = & 14 \end{array} \right\}$ using the matrix (Gauss-Jordan) method.

3. A museum has a combined collection of 160 cars and motorbikes. When the museum's mechanic checks the air in the tires, he has 526 tires to check. How many cars and how many bikes doe the museum have? (Adopt variables, state meaning and formulate equations reflecting the data. Guessing is worth 0 points.)

4. Simplify the following expressions:

$$\left(\frac{ab^{-3}}{a^2b}\right)^{-2} =$$

$$(7xz^2)^{-3}\left(\frac{7xy^{-1}}{z}\right)^4 =$$

5. Compute and simplify:

$$2(x+3)(x-2) - (2x-1)^2 =$$