

YOUR NAME: _____

George Voutsadakis

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. Use substitution to solve the following system of linear equations.

$$\begin{cases} 2x + y = -14 \\ 5x + 12y = 3 \end{cases}$$

Please, perform operations carefully and be organized (top-to-bottom).

2. George is 17 years older than Katie. When they first met, 14 years ago, George was twice as old as Katie had been. How old are George and Katie now?

- (a) Set variables and explain **precisely** their meaning.

- (b) Write equations reflecting the data.

- (c) Solve the equations to discover George's and Katie's ages.

3. Use the addition method to solve the system

$$\begin{cases} x + 5y - z = 0 \\ 3x + 17y - 6z = -4 \\ x + 4y - 2z = -3 \end{cases}$$

Please, perform operations carefully and be organized (top-to-bottom).