

## Gaussian Elimination

Name: \_\_\_\_\_

$$1) \begin{cases} x - 2y + 3z = 16 \\ 2x - y + z = 9 \\ -5x - 3y + 2z = 1 \end{cases}$$

Solution: (2, -1, 4)

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$$2) \begin{cases} x + y - z = 8 \\ 2x - 2y - z = 11 \\ x - 5y + 3z = -12 \end{cases}$$

Solution: (3, 0, -5)

$$3) \begin{cases} -3x + y - 4z = -12 \\ 5x - 5y + z = 12 \\ 7x + 9y + z = 0 \end{cases}$$

Solution: (1, -1, 2)

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$$4) \begin{cases} -r + 6s - 4t = 17 \\ -4r - s - 4t = 7 \\ -r + s + 5t = -15 \end{cases}$$

Solution: (1, 1, -3)

$$5) \begin{cases} 3r + 2s + 3t = -2 \\ -3r + s - 2t = -1 \\ 6r + s + 5t = -1 \end{cases}$$

Infinitely many solutions

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$$6) \begin{cases} x + y + 2z = 9 \\ 3x - 4y = 16 \\ -3x - 3y - 6z = 0 \end{cases}$$

No solution