Together you and I have scored 154 points. You have scored 5 less than twice the number of points that I have scored. Write a system of equations and solve to find the number of points each of us have scored.

$y + I = 154$

$y = 2I - 5$

Y = your PTS

I = I PTS

A $\begin{bmatrix} 1 & 1 \\ 1 & -2 \end{bmatrix}$ B $\begin{bmatrix} 154 \\ -5 \end{bmatrix}$

$y = 53$ pts

$I = 101$ pts

Using matrices the solution is (53, 101)

Without actually solving determine if each system of equations has 1, None, or Many solutions.

$y = 6x - 9$

$30x + 5y = 15$

1 sol

Different slopes

$y = \frac{15 - 30x}{5} = 3 - 6x$

$y = 7x + 20$

$y = 7$

1 sol

Different slopes

$y = -4x + 18$

$12x + 3y = 54$

Many

These are the same line

$y = \frac{54 - 12x}{3} = 18 - 4x$

Solve this system of equations using any method.

$5.2x + 3.8y = 10.2$ → y-int = $\frac{10.2}{3.8} = 2.68$

$7.8x + 5.7y = 15.3$ → y-int = $\frac{15.3}{5.7} = 2.68$

NO SOL
Same m
diff b

many sol
Same m
Same b

When you try to solve this system of matrices you get an error message which means that this system can't be solved with matrices. This system must then either have NO SOLUTION or MANY SOLUTIONS.

The only difference between these two situations is whether the lines have the same y-intercept or different y-intercepts. Therefore, you only need to find the two y-intercepts.

because the y-intercepts are the same they must be the same line and there are MANY SOLUTIONS

Solve this system of equations.

$9x + 7y - z = 43$

$y + 4z = 13$

$8x - 2y - 3z = -40$

$8x = 2y - 40 + 3z$

A $\begin{bmatrix} 9 & 7 & -1 \\ 0 & 1 & 4 \\ 8 & -2 & -3 \end{bmatrix}$ 3x3

B $\begin{bmatrix} 43 \\ 13 \\ -40 \end{bmatrix}$ 3x1

(-2.33, 7.27, 0.93)

factor each completely.

$12m^3 - 28m^2 - 80m$

$4m(3m^2 - 7m - 20)$

$4m(m-4)(3m+5)$

$-60$, $-12$, $5$, $-7$

| | $m$ | $-4$ |
|---|---|---|
| $3m$ | $3m^2$ | $-12m$ |
| $5$ | $5m$ | $-20$ |

$8Q^2 + 2Q - 21$

factor each completely.

$x^2 - 16$

$=(x+4)(x-4)$

$x \pm 4$

$9B^2 - 25$

$=(3B+5)(3B-5)$

$3B \pm 5$

$3c^3 - 12c$

$=3c(c^2-4)$

$=3c(c+2)(c-2)$

$3c(c \pm 2)$