

DAY 5 – More Elimination Method

1. What are the 6 steps of elimination method?

- Align + Box
- Multiply for same #'s in box but opp. sign
- Add to eliminate + solve

* Repeat for 2nd

∴ POI
- check

2. Solve the systems and check the solutions.

$3y - 5 + 6x = 0$

A. $x - 2y = 0$

$$\begin{array}{r} 6x + 3y = 5 \\ x - 2y = 0 \end{array}$$

$$\begin{array}{r} 6x + 3y = 5 \\ -6x + 12y = 0 \end{array}$$

$15y = 5$

$y = \frac{1}{3} = 0.3$

$$\begin{array}{r} 6x + 3y = 5 \\ x - 2y = 0 \end{array}$$

$$\begin{array}{r} 12x + 6y = 10 \\ 3x - 6y = 0 \end{array}$$

$15x = 10$

$x = \frac{2}{3} = 0.6$

∴ POI $(\frac{2}{3}, \frac{1}{3})$

check in (2) $(0.6, 0.3)$

$$\begin{array}{r} x - 2y = 0 \\ \frac{2}{3} - 2(\frac{1}{3}) \end{array}$$

B. $2x - y = 5$

$y + 3x + 9 = 0$

$$\begin{array}{r} 2x - y = 5 \\ 3x + y = -9 \end{array}$$

$$\begin{array}{r} 6x - 3y = 15 \\ -6x - 2y = 18 \end{array}$$

$-5y = 33$

$y = \frac{-33}{5} = -6.6$

$$\begin{array}{r} 2x - y = 5 \\ 3x + y = -9 \end{array}$$

$5x = -4$

$x = \frac{-4}{5} = -0.8$ ∴ POI

(Remarks)
 $(\frac{-4}{5}, \frac{-33}{5})$

$(-0.8, -6.6)$

check in (1)

$$\begin{array}{r} 2x - y = 5 \\ 2(\frac{-4}{5}) - (\frac{-33}{5}) \\ -\frac{8}{5} + \frac{33}{5} \\ \frac{25}{5} \\ \frac{25}{5} \end{array}$$

For the following problems:

- a) Create let statements
- b) Create TWO equations
- c) Solve the System by Elimination Method
- d) Write therefore statement – answering the question

3. Silvio invests \$8000 for his children's education. He invests part of the money in a high-risk bond that pays 5% interest per year, and the rest in a lower-risk bond that pays 3.25% per year. After one year, he has a total of \$312.50 in interest. How much did Silvio invest at each rate?

- a) let x be amount at high risk
- let y be amount at low risk

$$8000 = x + y$$

$$312.50 = 0.05x + 0.0325y$$

$$-400 = -0.05x - 0.05y$$

$$315.50 = 0.05x + 0.0325y$$

$$-87.5 = -0.0175y$$

$$5000 = y$$

$$8000 = x + y$$

$$312.5 = 0.05x + 0.0325y$$

$$-260 = -0.0325x - 0.0325y$$

$$312.5 = 0.05x + 0.0325y$$

$$52.50 = 0.0175x$$

$$3000 = x$$

- d) ∴ He invested \$3000 at high risk and \$5000 at low risk.

4. Tickets for a play cost \$5 for adults and \$3 for children. A total of 800 tickets are sold and total sales are \$3600. How many adult tickets are sold?

- a) let a be # of adult tickets
- let c be # of children

$$\begin{array}{r} 5a + 3c = 3600 \\ a + c = 800 \\ \hline -5 \quad -5 \quad -5 \end{array}$$

$$\begin{array}{r} 5a + 3c = 3600 \\ -5a - 5c = -4000 \\ \hline \end{array}$$

$$-2c = -400$$

$$c = 200$$

$$\begin{array}{r} 5a + 3c = 3600 \\ a + c = 800 \\ \hline -3 \quad -3 \quad -3 \end{array}$$

$$\begin{array}{r} 5a + 3c = 3600 \\ -3a - 3c = -2400 \\ \hline \end{array}$$

$$2a = 1200$$

$$a = 600$$

- d) ∴ 600 adult tickets were sold.

9+2

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