Warm Up

Which of the following is the inverse of the matrix $\begin{pmatrix} 4 & -3 \\ 2 & -2 \end{pmatrix}$?

[A] $\begin{pmatrix} -1 & \frac{3}{2} \\ -1 & 2 \end{pmatrix}$ [B] $\begin{pmatrix} 2 & -1 \\ \frac{3}{2} & -1 \end{pmatrix}$ [C] $\begin{pmatrix} 1 & -\frac{3}{2} \\ 1 & -2 \end{pmatrix}$ [D] $\begin{pmatrix} \frac{1}{7} & -\frac{3}{14} \\ \frac{1}{7} & -\frac{2}{7} \end{pmatrix}$

Which system of equations would you use to represent the cost of these two newspaper classified rates?

- The "Daily Gleaner" has a flat rate of \$18 plus 20¢ per word
- The "Times-Transcript" has a flat rate of \$25 plus 10¢ per word

(A) $\begin{matrix} C-18=20w \\ C-25=10w \end{matrix}$ (B) $\begin{matrix} 18+C=20w \\ 25+C=10w \end{matrix}$ (C) $\begin{matrix} C=02w+18 \\ C=01w+25 \end{matrix}$ (D) $\begin{matrix} C-18w=0.2 \\ C-25w=01 \end{matrix}$

Questions from Homework

BONUS!!

Determine a, b, and c so that the points (-1 , 5), (2 , -1), and (3 , 13) are on the graph of $f(x) = ax^2 + bx + c$.

$y = ax^2 + bx + c$

(-1,5)

$5 = a(-1)^2 + b(-1) + c$

$5 = a - b + c$

$a - b + c = 5$

(2,-1)

$-1 = a(2)^2 + b(2) + c$

$-1 = 4a + 2b + c$

$4a + 2b + c = -1$

(3,13)

$13 = a(3)^2 + b(3) + c$

$13 = 9a + 3b + c$

$9a + 3b + c = 13$

$a - b + c = 5$

$4a + 2b + c = -1$

$9a + 3b + c = 13$

$$\left[\begin{array}{ccc|c} 1 & -1 & 1 & 5 \\ 4 & 2 & 1 & -1 \\ 9 & 3 & 1 & 13 \end{array}\right]$$

$$\left[\begin{array}{ccc|c} 1 & 0 & 0 & 4 \\ 0 & 1 & 0 & -6 \\ 0 & 0 & 1 & -5 \end{array}\right]$$

$a = 4$

$b = -6$

$c = -5$

$$\begin{aligned} a-b+c&=5 \\ 4a+2b+c&=-1 \\ 9a+3b+c&=13 \end{aligned}$$

$$\begin{aligned} a-b+c&=5 \\ \leftrightarrow 4a+2b+c&=-1 \\ \leftrightarrow 9a+3b+c&=13 \end{aligned}$$

$$\begin{aligned} -3a-3b&=6 \\ -5a-b&=-14 \end{aligned}$$

$$\begin{aligned} -3a-3b&=6 \\ \leftrightarrow -15a-3b&=-42 \\ \hline 12a&=48 \\ a&=4 \end{aligned}$$

$$\begin{aligned} -5a-b&=-14 \\ -5(4)-b&=-14 \\ -20-b&=-14 \\ -b&=6 \\ b&=-6 \end{aligned}$$

$$\begin{aligned} a-b+c&=5 \\ 4+6+c&=5 \\ 10+c&=5 \\ c&=-5 \end{aligned}$$

⑧ Let x = money invested @ 8%.
Let y = " " @ 10%
Let z = " " @ 16%

$$x+y+z=9000$$
$$0.08x+0.1y+0.16z=1160$$
$$-0.08x-0.1y+0.16z=440$$

⑤ a)

$$\left[\begin{array}{ccc|c} 3 & -4 & 5 & 26 \\ 6 & -2 & -3 & -39 \\ 1 & 3 & -4 & -31 \end{array}\right] \begin{array}{l} \\ R2 - 2R1 \\ 3R3 - R1 \end{array} \left[\begin{array}{ccc|c} 3 & -4 & 5 & 26 \\ 0 & 6 & -13 & -91 \\ 0 & 13 & -17 & -119 \end{array}\right] 6R3 - 13R2$$