

b)

$$|y| = 2(1x - (x+2) - 2x(5-2) - 2(5x+10) - 2x)$$

$$|y| = 2x - 2x - 4 - 10x + 4x - 10x - 20 + 4x = 5$$

$$-12x - 24 = 5$$

$$\cancel{-12x} + 24$$

$$-12x = 5 + 24$$

$$-12x = 29$$

$$x = \frac{29}{-12}$$

$$x = -2.42$$

c)

$$\begin{pmatrix} 3 & 1 & 4 \\ 5 & 3 & 1 \\ 2 & 4 & 3 \end{pmatrix} \begin{pmatrix} x \\ y \\ z \end{pmatrix} = \begin{pmatrix} 21 \\ 15 \\ 10 \end{pmatrix}$$

$$|A| = 3(9-4) - 1(15-2) + 4(20-6)$$

$$|A| = 3(5) - 1(13) + 4(14)$$

$$|A| = 15 - 13 + 56$$

$$|A| = 58$$

$$A_1 = \begin{pmatrix} 21 & 1 & 4 \\ 15 & 3 & 1 \\ 10 & 4 & 3 \end{pmatrix}$$

$$|A_1| = 21(9-4) - 1(45-10) + 4(60-30)$$

$$|A_1| = 21(5) - 1(35) + 4(30)$$

$$|A_1| = 105 - 35 + 120$$

$$|A_1| = 190$$

$$A_2 = \begin{pmatrix} 3 & 21 & 4 \\ 5 & 15 & 1 \\ 2 & 10 & 3 \end{pmatrix}$$

$$|A_2| = 3(45-10) - 21(15-2) + 4(50-30)$$

$$|A_2| = 3(35) - 21(13) + 4(20)$$

$$|A_2| = 105 - 273 + 80$$

$$|A_2| = -88$$