

Brenda's school is selling tickets to a spring musical. On the first day of ticket sales the school sold 3 senior citizen tickets and 9 child tickets for a total of \$75. The school took in \$67 on the second day by selling 8 senior citizen tickets and 5 child tickets. What is the price each of one senior citizen ticket and on child ticket?

$$S = \text{cost}^{\text{senior}} \text{ ticket}$$

$$C = \text{cost}^{\text{child}} \text{ ticket}$$

$$3S + 9C = 75$$

$$8S + 5C = 67$$

$$3S + 9C = 75$$

$$\begin{array}{r} 3S + 9C = 75 \\ -9C \quad -9C \\ \hline 3S = -9C + 75 \end{array}$$

$$\frac{3S}{3} = \frac{-9C}{3} + \frac{75}{3}$$

$$S = -3C + 25$$

$$8(-3C + 25) + 5C = 67$$

$$-24C + 200 + 5C = 67$$

$$\begin{array}{r} -24C + 200 + 5C = 67 \\ -19C + 200 = 67 \\ \hline \end{array}$$

$$\begin{array}{r} +19C \quad +19C \\ \hline \end{array}$$

$$\begin{array}{r} 200 = 67 + 19C \\ -67 \quad -67 \\ \hline 133 = 19C \end{array}$$

$$\frac{133}{19} = \frac{19C}{19}$$

$$7 = C$$

$$C = \$7$$

$$3S + 9(7) = 75$$

$$\begin{array}{r} 3S + 63 = 75 \\ -63 \quad -63 \\ \hline 3S = 12 \end{array}$$

$$\frac{3S}{3} = \frac{12}{3}$$

$$S = 4$$

Quiz Review - Extra Credit

Elimination: $-1 + 10 = 9$

$$4\left(-\frac{1}{4}\right) + 2(5)$$

$$4x + 2y = 9$$

$$+ (-4x + 3y = +16)$$

$$\frac{5y}{5} = \frac{25}{5}$$

$$y = 5$$

$$4x + 2(5) = 9$$

$$4x + 10 = 9$$

$$\frac{-10}{-10} \quad \frac{-10}{-10}$$

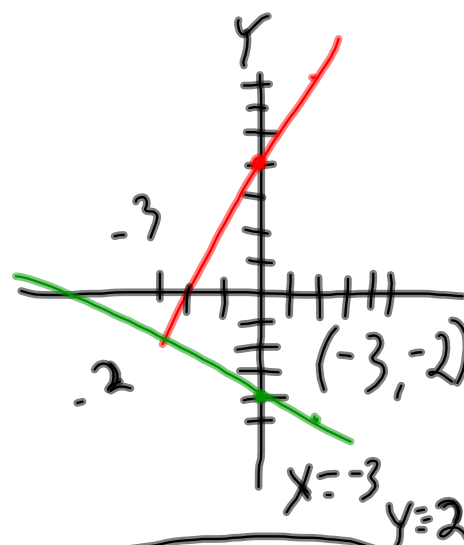
$$\frac{4x}{4} = \frac{-1}{4}$$

$$x = -\frac{1}{4}$$

$$y = mx + b$$

$$\begin{array}{r} -3x + 2y = 8 \\ +3x \qquad +3x \\ \hline 2y = -3x + 8 \\ \frac{2y}{2} = \frac{-3x}{2} + \frac{8}{2} \\ y = -\frac{3}{2}x + 4 \end{array}$$

$$\begin{array}{r} x + 2y = -8 \\ -x \qquad -x \\ \hline 2y = -x - 8 \\ \frac{2y}{2} = \frac{-x}{2} - \frac{8}{2} \Rightarrow y = -\frac{1}{2}x - 4 \end{array}$$



2, 8, 14, 20
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Arithmetic
Sequence

Common Difference

Write the formula

$$a_n = a_1 + (n-1)d$$

$$a_n = 2 + (n-1)6$$

$$a_{25} = 2 + (25-1)6$$

$$= 2 + (24)6$$

$$= 2 + 144$$

$$a_{25} = 146$$

find 25th term