

3) Jimmy and Gabriella are selling cookie dough for a school fundraiser. Customers can buy packages of chocolate chip cookie dough and packages of double chocolate cookie dough. Jimmy sold 14 packages of chocolate chip cookie dough and 12 packages of double chocolate cookie dough. Gabriella sold 4 packages of chocolate chip cookie dough and 3 packages of double chocolate cookie dough for a total of \$80. Find the cost each of one package of chocolate chip cookie dough and one package of double chocolate cookie dough.

Let x = chocolate chip dough

Let y = double chocolate chip dough

$$14x + 12y = 304$$

$$4x + 3y = 80$$

$$14x + 12y = 304$$

$$(-4) \times -16x - 12y = -320$$

$$\textcircled{1} 14x + 12y = 304$$

$$14(8) + 12y = 304$$

$$112 + 12y = 304$$

$$\frac{12y}{12} = \frac{192}{12}$$

$$y = 16$$

$$-2x = -16$$

$$\frac{-2x}{-2} = \frac{-16}{-2}$$

$$x = 8$$

4) Bill and Jasmine are selling fruit for a school fundraiser. Customers can buy small or large boxes of oranges. Bill sold 9 small boxes of oranges and 14 large boxes of oranges for a total of \$397. Jasmine sold 1 small box of oranges and 7 large boxes of oranges for a total of \$153. What is the cost each of one small box of oranges and one large box of oranges?

Find: the cost of each.

Let x = cost of small box of oranges

Let y = cost of large box of oranges

① $9x + 14y = 397$

② $x + 7y = 153$

Isolate x in ②

$$\begin{array}{r} x + 7y = 153 \\ -7y \\ \hline x = 153 - 7y \end{array}$$

$$x = -7y + 153$$

Substitute in ①

$$9(-7y + 153) + 14y = 397$$

Solve each system by elimination.

$$\begin{array}{l} 1) \quad 5x - 4y = 28 \\ \quad \quad 3x - 9y = 30 \end{array}$$

$\times 3 \rightarrow 15x - 12y = 84$
 $\times (-5) \rightarrow -15x + 45y = -150$

$$\begin{array}{r} 33y = -66 \\ \hline 33 \quad 33 \end{array}$$

Substitute in ①

$$5x - 4y = 28$$

$$5x - 4(-2) = 28$$

$$5x + 8 = 28 - 8$$

$$\begin{array}{r} 5x = 20 \\ \hline 5 \quad 5 \\ \hline x = 4 \end{array}$$

Check in ②

$$3x - 9y = 30$$

$$3(4) - 9(-2) = 30$$

$$12 + 18 = 30$$

$(4, -2)$ is the solution.

Solve each system by elimination.

$$\begin{array}{rcl}
 2) \quad -5x + 5y = 5 & \times 8 & \Rightarrow -40x + 40y = 40 \\
 8x + 8y = 24 & \times 5 & \Rightarrow 40x + 40y = 120 \\
 \hline
 & & 80y = 160 \\
 & & \frac{80y}{80} = \frac{160}{80}
 \end{array}$$


Substitute in ①

$$\begin{array}{rcl}
 -5x + 5y & = & 5 \\
 -5x + 5(2) & = & 5 \\
 -5x + 10 & = & 5 - 10 \\
 -5x & = & -5 \\
 \frac{-5x}{-5} & = & \frac{-5}{-5} \\
 x & = & 1
 \end{array}$$

check in ②

$$\begin{array}{rcl}
 8x + 8y & & \\
 8(1) + 8(2) & & \\
 8 + 16 & & \\
 24 & &
 \end{array}$$

∴ POI = (1, 2)

☒ Question numbers ☐ Show answers
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Solve each system by elimination.

3) $3x - 5y = 11$

$8x - 4y = 20$

$$\begin{array}{r} 12x - 24y = 44 \\ \times (-5) \quad -40x + 20y = -160 \\ \hline \end{array}$$

finish thru #6