

7.3 Practice A

Date _____ Period _____

Solve each system by elimination. Check Algebraically.

$$\begin{array}{r} 1) \quad 3x - 5y = -23 \\ \quad -8x + 5y = 28 \\ \hline -5x = 5 \\ \hline -5 \quad -5 \\ \hline x = -1 \end{array}$$

FIND Y: $-8(-1) + 5y = 28$
 $8 + 5y = 28$
 $-8 \quad -8$
 $5y = 20$
 $\frac{5y}{5} = \frac{20}{5} \quad | \quad y = 4$

C: $3(-1) - 5(4) = -23$ C: $-8(-1) + 5(4) = 28$
 $-23 = -23 \checkmark$ $28 = 28 \checkmark$

$$\begin{array}{r} 2) \quad -2x - 3y = -5 \\ \quad -1(-2x - 7y = -25) \\ \hline -2x - 3y = -5 \\ \quad 2x + 7y = 25 \\ \hline 4y = 20 \\ \hline \frac{4y}{4} = \frac{20}{4} \\ y = 5 \end{array}$$

FIND X:
 $-2x - 3(5) = -5$
 $-2x - 15 = -5$
 $+15 \quad +15$
 $-2x = 10$
 $\frac{-2x}{-2} = \frac{10}{-2} \quad | \quad x = -5$

C: $-2(-5) - 3(5) = -5$ C: $-2(-5) - 7(5) = -25$
 $-5 = -5$ $-25 = -25 \checkmark$

3) The school that Jennifer goes to is selling tickets to the annual dance competition. On the first day of ticket sales the school sold 1 senior citizen ticket and 4 child tickets for a total of \$45. The school took in \$35 on the second day by selling 1 senior citizen ticket and 3 child tickets. What is the price each of one senior citizen ticket and one child ticket?

KI: DAY 1 - 1 SENIOR TIX, 4 KID TIX, EARNED \$45
 DAY 2 - 1 SENIOR TIX, 3 KID TIX, EARNED \$35

$x = \$ / \text{SENIOR TIX}$
 $y = \$ / \text{KID TIX}$

$$\begin{array}{r} \text{DAY 1: } x + 4y = 45 \\ \text{DAY 2: } (x + 3y = 35) \times -1 \rightarrow \\ \hline x + 4y = 45 \\ -x - 3y = 35 \\ \hline y = 10 \end{array}$$

FIND X:
 $x + 4(10) = 45$
 $x + 40 = 45$
 $-40 \quad -40$
 $x = 5$

Cost of SENIOR TICKET is \$5
 AND CHILD TICKET is \$10

- 4) DeShawn and Jack are selling fruit for a school fundraiser. Customers can buy small boxes of oranges and large boxes of oranges. DeShawn sold 10 small boxes of oranges and 8 large boxes of oranges for a total of \$186. Jack sold 10 small boxes of oranges and 5 large boxes of oranges for a total of \$135. What is the cost each of one small box of oranges and one large box of oranges?

KI: DeShawn sold 10 small oranges, 8 large, earned \$186
Jack sold 10 small boxes oranges, 5 large, earned \$135

$x = \text{\$/small box of oranges}$

$y = \text{\$/large box of oranges}$

$$\begin{array}{l} \text{DeShawn: } 10x + 8y = 186 \longrightarrow 10x + 8y = 186 \\ \text{Jack: } (10x + 5y = 135) \times -1 \longrightarrow \underline{-10x - 5y = -135} \end{array}$$

$$\frac{y}{3} = \frac{51}{3}$$

$$\boxed{y = 17}$$

FIND X:

$$10x + 8(17) = 186$$

$$\begin{array}{r} 10x + 136 = 186 \\ -136 \quad -136 \\ \hline 10x = 50 \end{array}$$

$$10x = 50$$

$$\boxed{x = 5}$$

Box of small oranges cost \$5 and
cost of large box oranges cost \$17