

# #20 Linear Sys Word Problems

10/28/15

- ① At an Ice Cream parlor, ice cream cones cost \$1.10 and sundaes cost \$2.35. One day, the receipts for a total of 172 cones and sundaes were \$294.20. How many cones were sold?
- ② You purchase 8 gal of paint and 3 brushes for \$152.50. The next day, you purchase 6 gal of paint and 2 brushes for \$113.00. How much does each gallon of paint and each brush cost?
- ③ Shopping at Savers Mart, Lisa buys her children four shirts and three pairs of pants for \$85.50. She returns the next day and buys three shirts and five pairs of pants for \$115.00. What is the price of each shirt and each pair of pants?
- ④ Grandma's Bakery sells single-crust apple pies for \$6.99 and double-crust cherry pies for \$10.99. The total number of pies sold on a busy Friday was 36. If the amount collected for all the pies that day was \$331.64, how many of each type were sold?

①  $C = \text{Cones sold}$   
 $S = \text{Sundaes sold}$

$$1.1C + 2.35S = 294.2$$

$$C + S = 172$$

$$C = 172 - S$$

$$1.1(172 - S) + 2.35S = 294.2$$

$$189.2 - 1.1S + 2.35S = 294.2$$

$$189.2 + 1.25S = 294.2$$

$$-189.2 \qquad -189.2$$

$$+1.25S = 105$$

$$S = 84$$

$$C + 84 = 172$$

$$C = 88$$

Cones sold = 88

②  $P = \$ \text{ for paint}$   
 $b = \$ \text{ for brush}$

$$-2(3b + 8p = 152.5)$$

$$3(2b + 6p = 113.)$$

$$3b + 8(17) = 152.5 \quad -6b - 16p = -305$$

$$3b + 136 = 152.5 \quad 6b + 18p = 339$$

$$3b = 16.5$$

$$b = 5.5$$

$$2p = 34$$

$$p = 17$$

brush is \$5.50

paint is \$17

(3)  $S = \$$  for shirt  
 $P = \$$  for pants

$$\begin{aligned}4S + 3(18.5) &= 85.5 \\4S + 55.5 &= 85.5 \\4S &= 30 \\S &= 7.5\end{aligned}$$

$$\begin{aligned}-3(4S + 3P &= 85.5) \\4(3S + 5P &= 115)\end{aligned}$$

$$\begin{aligned}-12S - 9P &= -256.5 \\12S + 20P &= 460 \\11P &= 203.5 \\P &= 18.50\end{aligned}$$

(4)  $a = \#$  apple pies  
 $C = \#$  cherry pies

$$\begin{aligned}a + C &= 36 \\6.99a + 10.99C &= 331.64\end{aligned}$$

$$\begin{aligned}6.99a + 10.99(36 - a) &= 331.64 \quad C = 36 - a \\6.99a + 395.64 - 10.99a &= 331.64 \\-4a + 395.64 &= 331.64\end{aligned}$$

$$-4a = -64$$

$$a = 16$$

$$\begin{aligned}16 + C &= 36 \\C &= 20\end{aligned}$$

16 apple  
20 cherry