Key

Systems of Equations Word Problems

1) Find the value of two numbers if their sum is 12 and their difference is 4.

$x+y=12$

$x-y=4$

$(8,4)$

2) The difference of two numbers is 3. Their sum is 13. Find the numbers.

$x-y=3$

$x+y=13$

$(8,5)$

3) Flying to Denver with a tailwind a plane averaged 558 mph. On the return trip the plane only averaged 512 mph while flying back into the same wind. Find the speed of the wind and the speed of the plane in still air. (Tailwind means the wind is pushing you – adding to your speed)

y x

speed tail

$x+y=558$

$x-y=512$

$(535,23)$

4) The school that Freddy goes to is selling tickets to a spring musical. On the first day of ticket sales the school sold 30 senior citizen tickets and 10 child ticket for a total of $380. The school took in $520 on the second day by selling 30 senior citizen tickets and 20 child tickets. Find the price of a senior citizen ticket and the price of a child ticket.

We already did this. Yeah!

5) The sum of the two numbers is 12. The difference of these numbers is -36. What are the two numbers?

$x+y=12$

$x-y=-36$

$(-12, 24)$

6) 75 people attended a baseball game. Everyone there was a fan of either the home team or the away team. The number of home team fans was 90 less than 4 times the number of away team fans. How many home team and away team fans attended the game?

home x away y

$x = 4y - 90$

$x + y = 75$

$y = 33$

$x = 42$

$(42, 33)$

7) The state fair is a popular field trip destination. This year the senior class at Oswego East and the senior class at Oswego High both planned trips there. The senior class at Oswego East rented and filled 8 vans and 8 buses with 240 students. Oswego High rented and filled 4 vans and 1 bus with 54students. Every van had the same number of students in it as did the buses. Find the number of students in each van and in each bus.

$8V + 8B = 240$

$4V + B = 54$

$V = 8$

$B = 22$

8) A test has twenty questions worth 100 points. The test consists of True/False questions worth 3 points each and multiple choice questions worth 11 points each. How many multiple choice questions are on the test?

$x + y = 20$

$3x + 11y = 100$

$(15, 5)$

y-value

5

9) The admission fee at a small fair is $1.50 for children and $4.00 for adults. On a certain day, 2200 people enter the fair and $5050 is collected. How many children and how many adults attended?

$C + A = 2200$

$150C + 400A = 505{,}000$

$C = 1500$

$A = 700$

10) Matt and Ming are selling fruit for a school fundraiser. Customers can buy small boxes of oranges and large boxes of oranges. Matt sold 3 small boxes of oranges and 14 large boxes of oranges for a total of $203. Ming sold 11 small boxes of oranges and 11 large boxes of oranges for a total of $220. Find the cost each of one small box of oranges and one large box of oranges.

$3S + 14L = 203$

$11S + 11L = 220$

$S = 7$

$L = 13$