

Geometry 10/6

Warm Up IXL

8th Grade

AA.3

I can solve a system of linear equations by any method

Ex. 1 Two school are going on a trip to New York City. The first school rented and filled 1 van and 6 busses with 372 students. The second school rented and filled 4 vans and 12 buses with 780 students. Each van and each bus carried the same number of students. How many student can each vehicle carry?

$x = \#$ of student in a van

$y = \#$ of students in a bus

$$S_1 = (1x + 6y = 372) \cdot 2$$

$$S_2 = 4x + 12y = 780$$

$$\begin{array}{r} 18 + 6y = 372 \\ -18 \\ \hline 6y = 354 \\ \frac{6y}{6} = \frac{354}{6} \\ y = 59 \end{array}$$

$$\begin{array}{r} -2x - 12y = -744 \\ 4x + 12y = 780 \\ \hline 2x = 36 \quad x = 18 \\ \frac{2x}{2} = \frac{36}{2} \end{array}$$

Each van held 18 students and
Each bus held 59 students.

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Ex. 2 Ms. Brown has exactly \$1.40 in dimes and nickels. If she has exactly 20 coins how many dimes and how many nickels does she have?

$x = \#$ of dimes
 $y = \#$ of nickels

$$\begin{array}{l} 0.1x + 0.05y = 1.40 \\ -0.1(x + y = 20) \end{array}$$

$$\begin{array}{r} x + 12 = 20 \\ -12 \quad -12 \\ \hline x = 8 \end{array}$$

Ms Brown has
8 dimes and
12 nickels.

$$\begin{array}{r} 0.1x + 0.05y = 1.4 \\ -0.1x - 0.1y = -2 \\ \hline -0.05y = -0.6 \\ \underline{-0.05} \quad \underline{-0.05} \\ y = 12 \end{array}$$

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Ex. 3 The school that Lisa goes to is selling tickets to the annual talent show. On the first day of ticket sales the school sold 4 senior citizen tickets and 5 student tickets for a total of \$102. The school took in \$126 on the second day by selling 7 senior citizen tickets and 5 student tickets. How much would Ms. Brown pay if she bought 2 senior tickets and 3 student tickets?

x = cost of senior ticket

y = cost of student tickets

$$\begin{aligned} 4x + 5y &= 102 \\ 1(7x + 5y &= 126) \\ -7x - 5y &= -126 \end{aligned}$$

$$\begin{aligned} -3x &= -24 \\ \frac{-3x}{-3} &= \frac{-24}{-3} \end{aligned}$$

$$x = 8$$

Ms Brown would pay \$52.00

$$\begin{aligned} 4 \cdot 8 + 5y &= 102 \\ 32 + 5y &= 102 \\ -32 & \quad -32 \\ \hline 5y &= 70 \quad y = 14 \end{aligned}$$

$$\begin{aligned} 2 \cdot 8 + 3 \cdot 14 &= 16 + 42 \\ &= 52 \end{aligned}$$

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Ex. 4 Keith just got his commercial driver's license and is starting a new career as a truck driver. Getting trained and licensed involved a one-time cost of \$445. Gas and insurance end up costing him \$4 per mile. For his first delivery Keith will get paid \$37 plus \$5 per mile that he drives. If he drives a certain distance on this delivery, Keith will break even, making back all the money he had to spend. How much would both the costs and earnings be? What distance would he have to drive?

$x = \#$ of miles

$$\begin{array}{r} 445 + 4x = 5x + 37 \\ \quad \quad \quad -5x \quad \quad \quad -5x \\ \hline 445 - 1x = 37 \\ -445 \quad \quad \quad -445 \\ \hline -1x = -408 \\ \quad \quad \quad \frac{-1}{-1} \quad \quad \quad \frac{-1}{-1} \\ \quad \quad \quad x = 408 \end{array}$$

$$\begin{array}{r} 5(408) + 37 \\ 1632 + 37 \\ \hline \$1669 \end{array}$$

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Hmwk Wkst

+ IXL 8th Grade

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