

Solving Systems 1
Using Substitution or Elimination



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1.
$$\begin{aligned}x + y &= 400 \\2.50x + 5.00y &= 1280\end{aligned}$$

2.
$$\begin{aligned}2x - 3y &= 4 \\5x - 6y &= 7\end{aligned}$$

3.
$$\begin{aligned}8x + 9y &= 10 \\6x + 5y &= 4\end{aligned}$$

$$4. \quad \begin{aligned} \frac{1}{2}x - \frac{1}{3}y &= \frac{1}{4} \\ 4x - y &= -1 \end{aligned}$$

$$5. \quad \begin{aligned} -\frac{1}{2}x + \frac{1}{3}y &= 1 \\ \frac{1}{3}x - \frac{1}{2}y &= \frac{1}{4} \end{aligned}$$

$$6. \quad \begin{aligned} \frac{11}{12}x + 4y &= \frac{4}{5} \\ \frac{5}{8}x + \frac{5}{6}y &= \frac{8}{9} \end{aligned}$$

Answers & Hints

1. (288, 112) This one is ideal for substitution
2. (-1, -2) Hint: Mult. top row by (-2) to cancel the y 's
3. (-1, 2) Hint: The LMC of 8 and 6 is 24, so multiply the top row by (3) and bottom by (-4).
4. $(-\frac{7}{10}, -\frac{9}{5})$ Hint: Mult. bottom row by $(-\frac{1}{3})$. You could alternatively get rid of the fractions in the top row before adding. (To clear fractions in any *equation*, multiply both sides by the LCD.)
5. $(-\frac{21}{5}, -\frac{33}{10})$ Hint: You could mult top by $(\frac{1}{3})$ and bottom by $(\frac{1}{2})$ to eliminate the x 's.
6. $(\frac{208}{125}, -\frac{68}{375})$ Hint: Mult bottom by $[-4 \cdot (\frac{6}{5})]$ which is $(-\frac{24}{5})$. This would cause the bottom y to have the same coefficient and opposite sign as the top y .