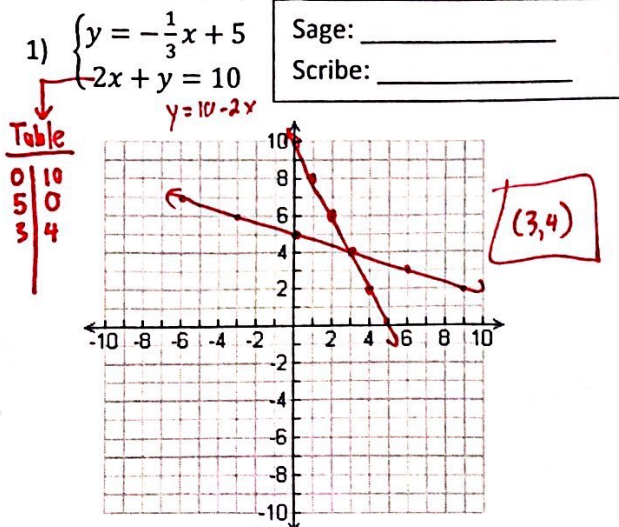


Names: KEY

Sage & Scribe: Systems of Equations

The sage is the only one who may talk. The scribe is the only one who may write. Switch roles after each problem.

For 1, solve by graphing.



For 2, solve by substitution.

2) $\begin{cases} 3x + 6y = 15 \\ x = 8 - y \end{cases}$

Sage: _____
Scribe: _____

$3(8 - y) + 6y = 15$
 $24 - 3y + 6y = 15$
 $24 + 3y = 15$
 -24
 $3y = -9$
 $y = -3$

$x = 8 - (-3)$
 $x = 11$

$(11, -3)$

For 3-4, solve by elimination.

3) $\begin{cases} x - 2y = 14 \\ 4x + 4y = 20 \end{cases}$

Sage: _____
Scribe: _____

$2x - 4y = 28$
 $4x + 4y = 20$
 $6x = 48$
 $x = 8$
 $4(8) + 4y = 20$
 $32 + 4y = 20$
 $4y = -12$
 $y = -3$

$(8, -3)$

4) $\begin{cases} 2x + 3y = 11 \\ 3x - 2y = 10 \end{cases}$

Sage: _____
Scribe: _____

$4x + 6y = 22$
 $9x - 6y = 30$
 $13x = 52$
 $x = 4$

$2(4) + 3y = 11$
 $8 + 3y = 11$
 $3y = 3$
 $y = 1$

$(4, 1)$

5) Jack and Jill ran up the hill. Jack's time was 12 seconds faster than Jill's. If you add their times together, you get 1 minute and 38 seconds. Write and solve a system of equations to find each of their times.

Sage: _____
Scribe: _____

$JA + JI = 98$
 $JA - JI = 12$
 $2JA = 110$
 $JA = 55 \text{ sec}$
 $JI = 43 \text{ sec}$
 ~~$JA = 55 \text{ sec}$
 $JI = 43 \text{ sec}$~~
 Jack: 43 sec
 Jill: 55 sec

$55 + JI = 98$
 $JI = 43$

6) In a recent game, Steph Curry made 15 shots total. Some of his shots were 2-pointers and some of his shots were 3-pointers. (He made no free throws.) All together, he scored 34 points. Write and solve a system of equations to find how many of each type of basket he scored.

Sage: _____
Scribe: _____

$x = \# \text{ 2-pointers}$
 $y = \# \text{ 3-pointers}$

$\begin{cases} x + y = 15 \\ 2x + 3y = 34 \end{cases}$

$-2(x + y = 15) \rightarrow -2x - 2y = -30$
 $2x + 3y = 34$
 $-2y = -30 - 34$
 $-2y = -64$
 $y = 32$

$x = 11$

$\begin{matrix} 11 & 2's \\ 4 & 3's \end{matrix}$