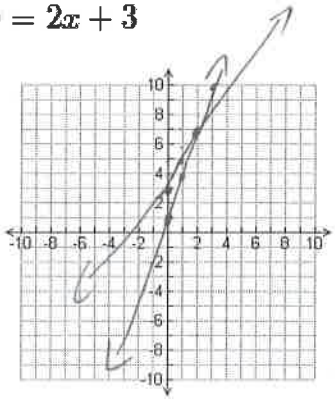
Linear Systems 100% Quiz Name KEY

Solve by Graphing:

$y = 3x + 1$
$y = 2x + 3$

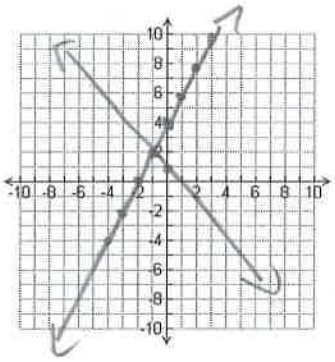
(2, 7)



Solve by Graphing:

$y = -x + 1$
$y = 2x + 4$

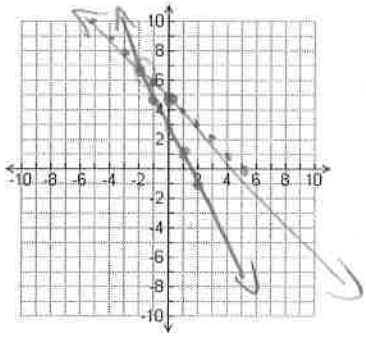
(-1, 2)



Solve by Graphing:

$y = -x + 5$
$y = -2x + 3$

(-2, 7)



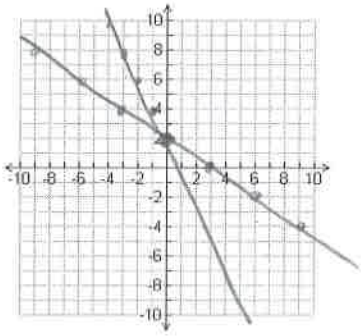
Solve by Graphing:

$2x + 3y = 6$
$2x + y = 2$

$3y = -2x + 6$
$y = -\frac{2}{3}x + 2$

$y = -2x + 2$

(0, 2)



Solve by Graphing:

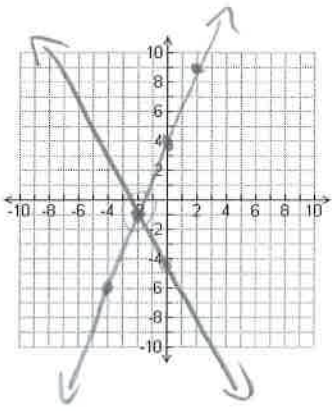
$5x = 2y - 8$
$3x + 2y = -8$

$\frac{5x+8}{2} = 2y$

$\frac{5}{2}x + 4 = y$

$2y = -3x - 8$
$y = -\frac{3}{2}x - 4$

(-2, -1)



Solve by Graphing:

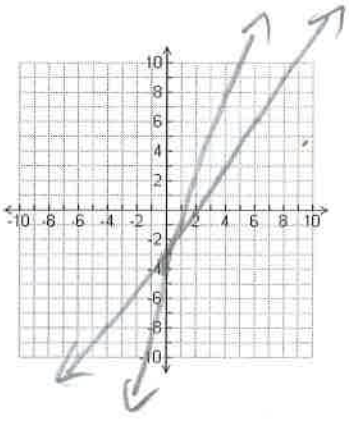
$3x - 2y = 6$
$3x - y - 4 = 0$

$-2y = \frac{-3x+6}{-2}$

$y = \frac{3}{2}x - 3$

$3x - 4 = y$

(?, -2)



How many solutions does this system have:

$y = \frac{2}{3}x - 5$

$2x - 3y = 6$

$\frac{2x-6=3y}{3}$

$\frac{2}{3}x - 2$

NO SOL

How many solutions does this system have:

$5x - 2y = 4$

$4y = 10x - 8$

$\frac{5x-4}{2} = 2y$

$\frac{5}{2}x - 2 = y$

$y = \frac{5}{2}x - 2$

∞ SOL

How many solutions does this system have:

$2x - y = 7$

$4x + 3y = -9$

$2x - 7 = y$

$3y = \frac{4x-9}{3}$

$y = -\frac{4}{3}x - 3$

1 SOL

Find the value of k if the following are parallel:

$2x - y = 7$

$kx - 2y = 8$

$k = 4$

Find the value of k if the following system has infinite solutions:

$kx - 3y = 4$

$y = \frac{1}{2}x - \frac{4}{3}$

$\frac{kx-4}{3} = 3y$

$\frac{k}{3} = \frac{1}{2}$ → $\frac{2k}{6} = \frac{3}{6}$

$2k = 3$

$k = \frac{3}{2}$

Find the value of x if the following system is inconsistent:

$kx + 5y = 10$

$5x - 2y - 6 = 0$

$5y = \frac{-kx+10}{5}$

$-2y = \frac{-5x-6}{-2}$

$-\frac{k}{5} = \frac{5}{2}$ → $\frac{-2k}{10} = \frac{25}{10}$

$k = \frac{25}{-2}$

Solve the following by elimination:

$x - y = 11$

$+ \quad 2x + y = 19$

$3x = \frac{30}{3}$

$x = 10$ $(10, -1)$

$10 - y = 11$

$y = -1$

Solve the following by elimination:

$7x + 2y = 24$

$- \quad 8x + 2y = 30$

$-1x = -6$

$x = 6$

$7(6) + 2y = 24$

$42 + 2y = 24$ -42

$2y = -18$

$\frac{2}{2}$

$y = -9$

$(6, -9)$

Solve the following by elimination:

$4x + 8y = 20$

$+ \quad -4x + 2y = -30$

$10y = -10$

$y = -1$

$4x + 8(-1) = 20$

$4x = 28$

$x = 7$

$(7, -1)$

Solve the following by elimination:

$9y = 4x + 9$

$x - 3y = -6$

$9y - 4x = 9$

$-3y + x = -6$

$9y - 4x = 9$

$-9y + 3x = -18$

$-1x = -9$

$x = 9$

$9 - 3y = -6$

$-3y = -15$

$y = 5$ $(9, 5)$

Solve the following by elimination:

$2(2x - 3y = 4)$

$4x = 8 + 6y$

$4x - 6y = 8$

$4x - 6y = 8$

$0 = 0$

∞ sol's

Solve the following by elimination:

$2(x - 2y = 3)$

$4y - 2x = 8$

$2x - 4y = 6$

$+ \quad -2x + 4y = 8$

$0 + 0 = 14$

NO SOL

Solve the following by substitution:

$y = 6x - 11$

$2x + 3y = 7$

$2x + 3(6x - 11) = 7$

$2x + 18x - 33 = 7 \; +33$

$20x = 40$

$x = 2$

$y = 6(2) - 11$

$(2, 1)$

Solve the following by substitution:

$2x - 3y = -1$

$y = x - 1$

$2x - 3(x - 1) = -1$

$2x - 3x + 3 = -1$

$-1x = -4$

$x = 4$

$y = 4 - 1$

$y = 3$

$(4, 3)$

Solve the following by substitution:

$7x + 2y = 13$

$x - 2y = 11$

$x = 2y + 11$

$7(2y + 11) + 2y = 13$

$14y + 77 + 2y = 13$

$16y + 77 = 13$

$16y = -64$

$y = -4$

$x = 2(-4) + 11$

$(3, -4)$

Find the value of two numbers if their sum is 12 and their difference is 4. $x+y=12$ $+\ x-y=4$ $2x=16$ $x=8$ $2y=8$ $y=4$ $(8,4)$	Flying to Kampala with a tailwind a plane averaged 158 km/h. On the return trip the plane only averaged 112 km/h while flying back into the same wind. Find the speed of the wind and the speed of the plane in still air. $s+w=158$ $+\ s-w=112$ $2s=270$ $s=135\text{ km/h}$ $2w=46$ $w=23$ plane 135 wind 23	Brenda's school is selling tickets to a spring musical. On the first day of ticket sales the school sold 3 senior citizen tickets and 9 child tickets for a total of $75. The school took in $67 on the second day by selling 8 senior citizen tickets and 5 child tickets. What is the price each of one senior citizen ticket and one child ticket? $3s+9c=75$ $8s+5c=67$ $24s+72c=600$ $24s+15c=201$ $57c=399$ $c=7$ $3s+9(7)=75$ $3s=12$ $s=4$