

Linear Systems Scavenger Hunt

Name: KEY

Problem #	Work	Final Solution
1	$\begin{aligned} 2x + 8y &= 20 \\ y &= 2 \end{aligned}$ $\begin{aligned} 2x + 8(2) &= 20 \\ 2x + 16 &= 20 \\ 2x &= 4 \end{aligned}$ $\begin{aligned} x &= 2 \\ y &= 2 \end{aligned}$	(2, 2) D
3	$\begin{aligned} x + 2y &= -15 \\ x - 3y &= 0 \end{aligned}$ $\begin{aligned} 3y + 2y &= -15 \\ 5y &= -15 \\ y &= -3 \end{aligned}$ $\begin{aligned} x &= 3(-3) \\ x &= -9 \end{aligned}$	(-9, -3) B
9	$\begin{aligned} x + y &= 3 \\ 3y + x &= 5 \end{aligned}$ $\begin{aligned} x + y &= 3 \\ -x - 3y &= -5 \\ \hline -2y &= -2 \\ y &= 1 \end{aligned}$ $\begin{aligned} x + 1 &= 3 \\ x &= 2 \end{aligned}$	(2, 1) B
13	$\begin{aligned} x - y &= 2 \\ 2x + y &= 1 \end{aligned}$ $\begin{aligned} x - y &= 2 \\ x - y &= 2 \\ \hline 3x &= 3 \\ x &= 1 \end{aligned}$ $\begin{aligned} 1 - y &= 2 \\ -y &= 1 \\ y &= -1 \end{aligned}$	(1, -1) C
16	$\begin{aligned} y &= 3x \\ x &= 3y \end{aligned}$ $\begin{aligned} y &= 3(3y) \\ y &= 9y \\ -8y &= 0 \\ y &= 0 \end{aligned}$ $\begin{aligned} x &= 3(0) \\ x &= 0 \end{aligned}$	(0, 0) B
10	$\begin{aligned} 2x - 3y &= -4 \\ x + 3y &= 7 \end{aligned}$ $\begin{aligned} 2x - 3y &= -4 \\ x + 3y &= 7 \\ \hline 3x &= -3 \\ x &= -1 \end{aligned}$ $\begin{aligned} 1 + 3y &= 7 \\ 3y &= 6 \\ y &= 2 \end{aligned}$	(1, 2) C
5	$\begin{aligned} y &= 6x + 11 \\ 2y - 4x &= 14 \end{aligned}$ $\begin{aligned} 2(6x + 11) - 4x &= 14 \\ 12x + 22 - 4x &= 14 \\ 8x + 22 &= 14 \\ 8x &= -8 \\ x &= -1 \end{aligned}$ $\begin{aligned} y &= 6(-1) + 11 \\ y &= 5 \end{aligned}$	(-1, 5) D
2	$\begin{aligned} x &= 5 \\ 2x + y &= 10 \end{aligned}$ $\begin{aligned} 2(5) + y &= 10 \\ 10 + y &= 10 \\ y &= 0 \end{aligned}$	(5, 0) A
8	$\begin{aligned} x &= 2y - 1 \\ 3x - 2y &= -3 \end{aligned}$ $\begin{aligned} 3(2y - 1) - 2y &= -3 \\ 6y - 3 - 2y &= -3 \\ 4y - 3 &= -3 \\ 4y &= 0 \\ y &= 0 \end{aligned}$ $\begin{aligned} x &= 2(0) - 1 \\ x &= -1 \end{aligned}$	(-1, 0) A
17	$\begin{aligned} p + q &= 4 \\ 4p + q &= 1 \end{aligned}$ $\begin{aligned} -p - q &= -4 \\ +4p + q &= 1 \\ \hline 3p &= -3 \\ p &= -1 \end{aligned}$ $\begin{aligned} -1 + q &= 4 \\ q &= 5 \end{aligned}$	(-1, 5) D

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12	$s = t + 4$ $2t + s = 19$ $2t + (t + 4) = 19$ $3t + 4 = 19$ $3t = 15$ $t = 5$ $s = 5 + 4$ $s = 9$ $(9, 5)$	B
4	$5x - 2y = 3$ $y = 2x$ $5x - 2(2x) = 3$ $5x - 4x = 3$ $x = 3$ $y = 2(3)$ $y = 6$ $(3, 6)$	A
7	$2x - 8y = 6$ $7 = -y - x$ $y = -x - 7$ $2x - 8(-x - 7) = 6$ $2x + 8x + 56 = 6$ $10x = -50$ $x = -5$ $y = -(-5) - 7$ $y = 5 - 7$ $y = -2$ $(-5, -2)$	D
15	$x - y = 0$ $12x - 5y = -21$ $x = y$ $12(y) - 5y = -21$ $7y = -21$ $y = -3$ $x = -3$ $(-3, -3)$	D
6	$4x + 7y = 19$ $-x + y = 9$ $4(-x + y = 9)$ $-4x + 4y = 36$ $4x + 7y = 19$ $11y = 55$ $y = 5$ $-x + 5 = 9$ $-x = 4$ $x = -4$ $(-4, 5)$	B
11	$-x + y = 1$ $2x + y = -2$ $-1(-x + y = 1)$ $x - y = -1$ $2x + y = -2$ $3x = -3$ $x = -1$ $-(-1) + y = 1$ $1 + y = 1$ $y = 0$ $(-1, 0)$	B
19	$3x + y = 3$ $2y + 7x = 1$ $y = 3 - 3x$ $2(3 - 3x) + 7x = 1$ $6 - 6x + 7x = 1$ $6 + x = 1$ $x = -5$ $y = 3 - 3(-5)$ $y = 18$ $(-5, 18)$	C
18	$3x - y = 0$ $5y = 15$ $y = 3$ $3x - 3 = 0$ $3x = 3$ $x = 1$ $y = 3$ $(1, 3)$	A
14	$2c - d = -2$ $4c + d = 20$ $2c - d = -2$ $4c + d = 20$ $6c = 18$ $c = 3$ $4(3) + d = 20$ $12 + d = 20$ $d = 8$ $(3, 8)$	D
20	$x - y = -5$ $x + 4 = 16$ $x = 12$ $12 - y = -5$ $-y = -17$ $y = 17$ $x = 12$ $(12, 17)$	C