

Why Does the President Put Vegetables in His Blender?

Answers 1–6:

(4, 2)	LD
(6, -1)	NG
(1, 2)	TR
(4, 8)	HE
(1, -3)	HO
(6, -3)	NT
(5, 3)	FO
(9, 2)	PI
(7, 3)	TH
(5, 2)	IS

Solve each system of equations below by the substitution method. Find the solution in the nearest answer column and notice the two letters next to it. Print these letters in the two boxes at the bottom of the page that contain the number of that exercise.

- (1) $y = 2x$ (4, 8)
 $x + y = 12$
- (2) $x = 3y - 1$ (5, 2)
 $x + 2y = 9$
- (3) $y = 2x - 5$ (1, -3)
 $4x - y = 7$
- (4) $2x - 3y = 12$ (9, 2)
 $x = 4y + 1$
- (5) $y = -x + 5$ (6, -1)
 $x - 4y = 10$
- (6) $x - y = 2$ (5, 3)
 $4x - 3y = 11$
- (7) $-2x + 3y = 14$ (-1, 4)
 $x + 2y = 7$
- (8) $6x - y = -4$ ($\frac{1}{2}$, 7)
 $2x + 2y = 15$
- (9) $x + y = 1$ ($-\frac{1}{3}$, $\frac{4}{3}$)
 $2x - y = -2$
- (10) $5x - 3y = -11$ (-4, -3)
 $x - 2y = 2$
- (11) $x - y = 3$ ($\frac{5}{2}$, $-\frac{1}{2}$)
 $6x + 4y = 13$
- (12) $2x - y = 16$ (8, 0)
 $-x + 2y = -8$

Answers 7–12:

$(\frac{1}{2}, -3)$	IN
$(8, -\frac{1}{2})$	VE
$(-\frac{1}{3}, \frac{4}{3})$	RL
(8, 0)	AS
(-3, 4)	TE
$(\frac{1}{2}, 7)$	HI
$(\frac{5}{2}, \frac{4}{3})$	LO
(-1, 4)	RW
$(\frac{5}{2}, -\frac{1}{2})$	PE
(-4, -3)	ED

Why Does the President Put Vegetables in His Blender?

Solve each system of equations below by the substitution method. Find the solution in the nearest answer column and notice the two letters next to it. Print these letters in the two boxes at the bottom of the page that contain the number of that exercise.

1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12
H	E	I	S	H	O	P	I	N	G	F	O	R	W	H	I	K	L	E	D	P	E	A	S
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Peace	World	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

President + Veges.

(1) $y = 2x$

$$x + y \leftarrow 12$$

$$x + 2x = 12$$

$$\begin{array}{r} 3x = 12 \\ \hline x = 4 \end{array}$$

$$\begin{array}{l} y = 2x \\ = 2(4) \end{array}$$

$$\boxed{y = 8}$$

$$(4, 8)$$

(2) $x = 3y - 1$

$$x - 2y = 9$$

$$3y - 1 + 2y = 9$$

$$\begin{array}{r} 5y - 1 = 9 \\ +1 +1 \end{array}$$

$$\begin{array}{r} 5y = 10 \\ \hline 5 \end{array}$$

$$\boxed{y = 2.}$$

$$x = 3y - 1$$

$$= 3(2) - 1$$

$$= 6 - 1$$

$$\boxed{x = 5}$$

$$(5, 2)$$

$$\textcircled{3} \quad y = 2x - 5$$

$$4x - y = 7$$

$$4x - (2x - 5) = 7$$

$$4x - 2x + 5 = 7$$

$$2x + 5 = 7$$

$$\begin{array}{r} -5 \\ -5 \end{array}$$

$$\begin{array}{r} 2x = 2 \\ \hline x = 1 \end{array}$$

$$y = 2x - 5$$

$$= 2(1) - 5$$

$$= 2 - 5$$

$$\boxed{y = -3}$$

$$(1, -3)$$

$$\textcircled{4} \quad x = 4y + 1$$

$$2x - 3y = 12$$

$$2(4y + 1) - 3y = 12$$

$$8y + 2 - 3y = 12$$

$$5y + 2 = 12$$

$$\begin{array}{r} -2 \\ -2 \end{array}$$

$$\begin{array}{r} 5y = 10 \\ \hline 5 \end{array}$$

$$y = 2$$

$$x = 4y + 1$$

$$= 4(2) + 1$$

$$= 8 + 1$$

$$= 9$$

$$(9, 2)$$

$$\textcircled{5} \quad y = -x + 5$$

$$x - 4y = 10$$

$$x - 4(-x + 5) = 10$$

$$x + 4x - 20 = 10$$

$$\cancel{5x} - 20 = 10$$

$$\begin{array}{r} +20 \quad +10 \\ \hline 5x = 30 \end{array}$$

$$\boxed{x = 6}$$

$$y = -x + 5$$

$$= -6 + 5$$

$$\boxed{y = -1}$$

$$(6, -1)$$

$$\textcircled{6} \quad x - y = 2$$

$$+y \quad +y$$

$$x = 2 + y$$

$$4x - 3y = 11$$

$$4(2 + y) - 3y = 11$$

$$8 + 4y - 3y = 11$$

$$\begin{array}{r} -8 \quad -8 \\ \hline y = 3 \end{array}$$

$$\boxed{y = 3}$$

$$x = 2 + y$$

$$= 2 + 3$$

$$x = 5$$

$$(5, 3)$$

$$\textcircled{7} \quad \begin{array}{r} x+2y = 7 \\ -2y \quad -2y \\ \hline x = 7-2y \end{array}$$

$$\textcircled{8} \quad \begin{array}{r} 6x-y = -4 \\ -6x \quad -6x \\ \hline -y = -6x-4 \\ \frac{-y}{-1} = \frac{-6x-4}{-1} \\ y = 6x+4 \end{array}$$

$$\begin{array}{l} -2x+3y = 14 \\ -2(7-2y) + 3y = 14 \\ -14+4y+3y = 14 \\ -14+7y = 14 \\ +14 \quad +4 \\ \hline 7y = 28 \end{array}$$

$$\begin{array}{r} \frac{7y}{7} = \frac{28}{7} \\ y = 4 \end{array}$$

$$x = 7-2y$$

$$= 7-2(4)$$

$$= 7-8$$

$$x = -1$$

$$(-1, 4)$$

$$\begin{array}{l} 2x+12y = 15 \\ 2x+2(6x+4) = 15 \\ 2x+12x+8 = 15 \\ 14x+8 = 15 \\ -8 \quad -8 \\ \hline 14x = 7 \end{array}$$

$$\begin{array}{r} \frac{14x}{14} = \frac{7}{14} \\ x = \frac{1}{2} \end{array}$$

$$\begin{array}{l} y = 6x+4 \\ = 6(\frac{1}{2})+4 \\ ty = 3+4 \\ \hline ty = 7 \end{array} \quad (\frac{1}{2}, 7)$$

$$\textcircled{9} \quad \begin{array}{r} x+y = 1 \\ -x \quad -x \\ \hline \end{array}$$

$$y = 1-x$$

$$2x-y = -2$$

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

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

$$3x-1 = -2$$

$$\begin{array}{r} +1 +1 \\ \hline \end{array}$$

$$\frac{3x}{3} = \frac{-1}{3}$$

$$\boxed{x = -\frac{1}{3}}$$

$$y = 1-x$$

$$= 1 - \left(-\frac{1}{3}\right)$$

$$= 1 + \frac{1}{3}$$

$$\boxed{y = \frac{4}{3}} \quad \boxed{\left(-\frac{1}{3}, \frac{4}{3}\right)}$$

$$\textcircled{10} \quad \begin{array}{r} x-2y = 2 \\ +2y \quad +2y \\ \hline x = 2+2y \end{array}$$

$$5x-3y = -11$$

$$5(2+2y)-3y = -11$$

$$10+10y-3y = -11$$

$$10+7y = -11$$

$$-10 \quad -10$$

$$\cancel{7y} = -21$$

$$\cancel{7} \quad \cancel{7}$$

$$\boxed{y = -3}$$

$$x = 2+2y$$

$$= 2+2(-3)$$

$$= 2-6$$

$$x = -4$$

$$(-4, -3)$$

$$\textcircled{11} \quad \begin{array}{r} x-y=3 \\ +y \quad +y \\ \hline x = 3+y \end{array}$$

$$x = 3+y$$

$$6x \leftarrow 6(3+y) + 4y = 13$$

$$6(3+y) + 4y = 13$$

$$18 + 6y + 4y = 13$$

$$18 + 10y = 13$$

$$-18 \qquad -18$$

$$\begin{array}{r} 10y = -5 \\ 10 \qquad \overline{10} \end{array}$$

$$y = -\frac{1}{2}$$

$$\begin{array}{l} x = 3+y \\ = 3 - \frac{1}{2} \end{array}$$

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

$$(5\frac{1}{2}, -\frac{1}{2})$$

$$\textcircled{12} \quad \begin{array}{r} 2x-y=16 \\ -2x \quad -2x \\ \hline -y = 16-2x \end{array}$$

$$\begin{array}{r} -y = 16-2x \\ \hline -1 \quad -1 \quad -1 \end{array}$$

$$y = -16 + 2x$$

$$-x + 2y \leftarrow -x + 2(-16 + 2x) = -8$$

$$-x = -32 + 4x = -8$$

$$\begin{array}{r} -32 + 3x = -8 \\ +32 \qquad +32 \end{array}$$

$$\begin{array}{r} 3x = 24 \\ 3 \qquad \overline{3} \end{array}$$

$$x = 8$$

$$\begin{array}{l} y = -16 + 2x \\ = -16 + 2(8) \end{array}$$

$$= -16 + 16$$

$$\begin{array}{l} y = 0 \\ (8, 0) \end{array}$$