

# Fill in the Blanks

# Simultaneous Equations (different x coefficients)

Question	Multiply one or both equations	Add or subtract?	Carry out addition or subtraction	Work out y	Substitute y into one equation	Work out x	State both answers
$x + 2y = 5$ $3x + y = 10$	$3x + 6y = 15$ $3x + y = 10$	Subtract	$\begin{array}{r} 3x + 6y = 15 \\ - 3x + y = 10 \\ \hline 5y = 5 \end{array}$	$y = 1$	$x + 2y = 5$ $x + 2 = 5$	$x = 3$	$x = 3$ $y = 1$
$4x - y = 3$ $x + 3y = 17$	$4x - y = 3$ $4x + 12y = 68$	Subtract	$\begin{array}{r} 4x - y = 3 \\ - 4x + 12y = 68 \\ \hline -13y = -65 \end{array}$	$y = 5$	$4x - y = 3$ $4x - 5 = 3$ $4x = 8$	$x = 2$	$x = 2$ $y = 5$
$x - 5y = 14$ $-2x - y = -6$	$2x - 10y = 28$ $-2x - y = -6$	Add	$\begin{array}{r} 2x - 10y = 28 \\ + -2x - y = -6 \\ \hline -11y = 22 \end{array}$	$y = -2$	$x - 5y = 14$ $x + 10 = 14$	$x = 4$	$x = 4$ $y = -2$
$2x + 2y = 11$ $3x - 4y = 13$	$6x + 6y = 33$ $6x - 8y = 26$	Subtract	$\begin{array}{r} 6x + 6y = 33 \\ - 6x - 8y = 26 \\ \hline 14y = 7 \end{array}$	$y = 0.5$	$2x + 2y = 11$ $2x + 1 = 11$ $2x = 10$	$x = 5$	$x = 5$ $y = 0.5$
$5x + 7y = 6$ $-3x - 2y = 3$	$15x + 21y = 18$ $-15x - 10y = 15$	Add	$\begin{array}{r} 15x + 21y = 18 \\ + -15x - 10y = 15 \\ \hline 11y = 33 \end{array}$	$y = 3$	$5x + 7y = 6$ $5x + 21 = 6$ $5x = -15$	$x = -3$	$x = -3$ $y = 3$
$4x + 3y = -3$ $6x + 5y = -6$	$12x + 9y = -9$ $12x + 10y = -12$	Subtract	$\begin{array}{r} 12x + 9y = -9 \\ - 12x + 10y = -12 \\ \hline -y = 3 \end{array}$	$y = -3$	$4x + 3y = -3$ $4x - 9 = -3$ $4x = 6$	$x = \frac{3}{2}$	$x = \frac{3}{2}$ $y = -3$