

# Fill in the Blanks

# Simultaneous Equations (different y coefficients)

Question	Multiply one or both equations	Add or subtract?	Carry out addition or subtraction	Work out x	Substitute x into one equation	Work out y	State both answers
$2x + y = 9$ $x + 2y = 6$	$4x + 2y = 18$ $x + 2y = 6$	Subtract	$\begin{array}{r} 4x + 2y = 18 \\ - x + 2y = 6 \\ \hline 3x = 12 \end{array}$	$x = 4$	$2x + y = 9$ $8 + y = 9$	$y = 1$	$x = 4$ $y = 1$
$3x + y = 17$ $2x - 3y = 4$	$9x + 3y = 51$ $2x - 3y = 4$	Add	$\begin{array}{r} 9x + 3y = 51 \\ + 2x - 3y = 4 \\ \hline 11x = 55 \end{array}$	$x = 5$	$3x + y = 17$ $15 + y = 17$	$y = 2$	$x = 5$ $y = 2$
$x - 5y = 9$ $4x + y = 15$	$x - 5y = 9$ $20x + 5y = 75$	Add	$\begin{array}{r} x - 5y = 9 \\ + 20x + 5y = 75 \\ \hline 21x = 84 \end{array}$	$x = 4$	$x - 5y = 9$ $4 - 5y = 9$ $-5y = 5$	$y = -1$	$x = 4$ $y = -1$
$4x + 3y = 1$ $x - 2y = -8$	$8x + 6y = 2$ $3x - 6y = -24$	Add	$\begin{array}{r} 8x + 6y = 2 \\ + 3x - 6y = -24 \\ \hline 11x = -22 \end{array}$	$x = -2$	$4x + 3y = 1$ $-8 + 3y = 1$ $3y = 9$	$y = 3$	$x = -2$ $y = 3$
$2x - 5y = 13$ $4x - 2y = 10$	$4x - 10y = 26$ $20x - 10y = 50$	Subtract	$\begin{array}{r} 4x - 10y = 26 \\ - 20x - 10y = 50 \\ \hline -16x = -24 \end{array}$	$x = 1.5$	$2x - 5y = 13$ $3 - 5y = 13$ $-5y = 10$	$y = -2$	$x = 1.5$ $y = -2$
$x + 6y = 3$ $2x + 9y = 4$	$3x + 18y = 9$ $4x + 18y = 8$	Subtract	$\begin{array}{r} 3x + 18y = 9 \\ - 4x + 18y = 8 \\ \hline -1x = 1 \end{array}$	$x = -1$	$x + 6y = 3$ $-1 + 6y = 3$ $6y = 4$	$y = \frac{2}{3}$	$x = -1$ $y = \frac{2}{3}$