

Fill in the Blanks

Simultaneous Equations (same y coefficients)

Question	Add or Subtract?	Carry out addition or subtraction	Work out x	Substitute x into one equation	Work out y	Check using other equation	State both answers
$\begin{aligned} 3x + y &= 17 \\ x + y &= 7 \end{aligned}$	Subtract	$\begin{array}{r} 3x + y = 17 \\ - x + y = 7 \\ \hline 2x \quad = 10 \end{array}$	$x = 5$	$\begin{aligned} 3x + y &= 17 \\ 15 + y &= 17 \\ y &= 2 \end{aligned}$	$y = 2$	$\begin{aligned} x + y &= 7 \\ 5 + 2 &= 7 \\ &\checkmark \end{aligned}$	$\begin{aligned} x &= 5 \\ y &= 2 \end{aligned}$
$\begin{aligned} 5x + 2y &= 12 \\ 3x - 2y &= 4 \end{aligned}$	Add	$\begin{array}{r} 5x + 2y = 12 \\ + 3x - 2y = 4 \\ \hline 8x \quad = 16 \end{array}$	$x = 2$	$\begin{aligned} 5x + 2y &= 12 \\ 10 + 2y &= 12 \\ 2y &= 2 \end{aligned}$	$y = 1$	$\begin{aligned} 3x - 2y &= 4 \\ 6 - 2 &= 4 \\ &\checkmark \end{aligned}$	$\begin{aligned} x &= 2 \\ y &= 1 \end{aligned}$
$\begin{aligned} x - 2y &= 2 \\ 4x + 2y &= 18 \end{aligned}$	Add	$\begin{array}{r} x - 2y = 2 \\ + 4x + 2y = 18 \\ \hline 5x \quad = 20 \end{array}$	$x = 4$	$\begin{aligned} x - 2y &= 2 \\ 4 - 2y &= 2 \\ -2y &= -2 \end{aligned}$	$y = 1$	$\begin{aligned} 4x + 2y &= 18 \\ 16 + 2 &= 18 \\ &\checkmark \end{aligned}$	$\begin{aligned} x &= 4 \\ y &= 1 \end{aligned}$
$\begin{aligned} 4x - 3y &= 18 \\ x - 3y &= 9 \end{aligned}$	Subtract	$\begin{array}{r} 4x - 3y = 18 \\ - x - 3y = 9 \\ \hline 3x \quad = 9 \end{array}$	$x = 3$	$\begin{aligned} 4x - 3y &= 18 \\ 12 - 3y &= 18 \\ -3y &= 6 \end{aligned}$	$y = -2$	$\begin{aligned} x - 3y &= 9 \\ 3 - (-6) &= 9 \\ &\checkmark \end{aligned}$	$\begin{aligned} x &= 3 \\ y &= -2 \end{aligned}$
$\begin{aligned} x + 4y &= 19 \\ 3x + 4y &= 17 \end{aligned}$	Subtract	$\begin{array}{r} x + 4y = 19 \\ - 3x + 4y = 17 \\ \hline -2x \quad = 2 \end{array}$	$x = -1$	$\begin{aligned} x + 4y &= 19 \\ -1 + 4y &= 19 \\ 4y &= 20 \end{aligned}$	$y = 5$	$\begin{aligned} 3x + 4y &= 17 \\ -3 + 20 &= 17 \\ &\checkmark \end{aligned}$	$\begin{aligned} x &= -1 \\ y &= 5 \end{aligned}$
$\begin{aligned} 2x + y &= 3 \\ 6x - y &= 17 \end{aligned}$	Add	$\begin{array}{r} 2x + y = 3 \\ + 6x - y = 17 \\ \hline 8x \quad = 20 \end{array}$	$x = 2.5$	$\begin{aligned} 2x + y &= 3 \\ 5 + y &= 3 \\ y &= -2 \end{aligned}$	$y = -2$	$\begin{aligned} 6x - y &= 17 \\ 15 - (-2) &= 17 \\ &\checkmark \end{aligned}$	$\begin{aligned} x &= 2.5 \\ y &= -2 \end{aligned}$