

# Fill in the Blanks

# Simultaneous Equations (same x coefficients)

Question	Add or subtract?	Carry out addition or subtraction	Work out y	Substitute y into one equation	Work out x	Check using other equation	State both answers
$\begin{aligned} x + 3y &= 13 \\ x + y &= 7 \end{aligned}$	Subtract	$\begin{array}{r} x + 3y = 13 \\ -x + y = 7 \\ \hline 2y = 6 \end{array}$	$y = 3$	$\begin{aligned} x + 3y &= 13 \\ x + 9 &= 13 \end{aligned}$	$x = 4$	$\begin{aligned} x + y &= 7 \\ 4 + 3 &= 7 \\ &\checkmark \end{aligned}$	$\begin{aligned} x &= 4 \\ y &= 3 \end{aligned}$
$\begin{aligned} 3x + y &= 19 \\ 3x - 4y &= 14 \end{aligned}$	Subtract	$\begin{array}{r} 3x + y = 19 \\ -3x - 4y = 14 \\ \hline 5y = 5 \end{array}$	$y = 1$	$\begin{aligned} 3x + y &= 19 \\ 3x + 1 &= 19 \\ 3x &= 18 \end{aligned}$	$x = 6$	$\begin{aligned} 3x - 4y &= 14 \\ 18 - 4 &= 14 \\ &\checkmark \end{aligned}$	$\begin{aligned} x &= 6 \\ y &= 1 \end{aligned}$
$\begin{aligned} x + 5y &= 22 \\ -x + 2y &= 6 \end{aligned}$	Add	$\begin{array}{r} x + 5y = 22 \\ + -x + 2y = 6 \\ \hline 7y = 28 \end{array}$	$y = 4$	$\begin{aligned} x + 5y &= 22 \\ x + 20 &= 22 \end{aligned}$	$x = 2$	$\begin{aligned} -x + 2y &= 6 \\ -2 + 8 &= 6 \\ &\checkmark \end{aligned}$	$\begin{aligned} x &= 2 \\ y &= 4 \end{aligned}$
$\begin{aligned} 2x - 5y &= 25 \\ 2x + 3y &= 1 \end{aligned}$	Subtract	$\begin{array}{r} 2x - 5y = 25 \\ -2x + 3y = 1 \\ \hline -8y = 24 \end{array}$	$y = -3$	$\begin{aligned} 2x - 5y &= 25 \\ 2x + 15 &= 25 \\ 2x &= 10 \end{aligned}$	$x = 5$	$\begin{aligned} 2x + 3y &= 1 \\ 10 + (-9) &= 1 \\ &\checkmark \end{aligned}$	$\begin{aligned} x &= 5 \\ y &= -3 \end{aligned}$
$\begin{aligned} -3x + y &= 10 \\ 3x + 2y &= 11 \end{aligned}$	Add	$\begin{array}{r} -3x + y = 10 \\ + 3x + 2y = 11 \\ \hline 3y = 21 \end{array}$	$y = 7$	$\begin{aligned} -3x + y &= 10 \\ -3x + 7 &= 10 \\ -3x &= 3 \end{aligned}$	$x = -1$	$\begin{aligned} 3x + 2y &= 11 \\ -3 + 14 &= 11 \\ &\checkmark \end{aligned}$	$\begin{aligned} x &= -1 \\ y &= 7 \end{aligned}$
$\begin{aligned} x + 2y &= -7 \\ x - 6y &= 5 \end{aligned}$	Subtract	$\begin{array}{r} x + 2y = -7 \\ -x - 6y = 5 \\ \hline 8y = -12 \end{array}$	$y = -1.5$	$\begin{aligned} x + 2y &= -7 \\ x - 3 &= -7 \end{aligned}$	$x = -4$	$\begin{aligned} x - 6y &= 5 \\ -4 - (-9) &= 5 \\ &\checkmark \end{aligned}$	$\begin{aligned} x &= -4 \\ y &= -1.5 \end{aligned}$