

# Simultaneous Equations *ramp up*

ANSWERS

|                                                                                                       |                                                                                                                      |                                                                                                                               |                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>a</b> Solve<br>$y = 3x - 2$ and $y = x + 6$<br><br>$x = 4, y = 10$<br>two expressions for y equal  | <b>b</b> Solve<br>$x + y = -7$ and $x - y = 3$<br><br>$x = -2, y = -5$<br>two negative values                        | <b>c</b> Solve<br>$2x + 4y = 7$<br>and $2x - 2y = 1$<br><br>$x = \frac{3}{2}, y = 1$<br>a fraction in the answer              | <b>d</b> Solve<br>$4x - 3y = 1$<br>and $3x + 2y = 22$<br><br>$x = 4, y = 5$<br>multiply both: opposite signs                                       |
| <b>e</b> Solve<br>$2(x + y) = 14$<br>and $3x - y = 5$<br><br>$x = 3, y = 4$<br>expand a bracket first | <b>f</b> Solve<br>$\frac{x}{2} + y = 5$ and $x - \frac{y}{3} = 3$<br><br>$x = 4, y = 3$<br>clear the fractions first | <b>g</b> How many<br>solutions do $y = 2x + 1$<br>and $4x - 2y = 6$ have?<br><br><i>none</i><br>parallel lines: no solution   | <b>h</b> Solve $y = 2x^2$<br>and $y = 5x - 2$<br><br>$x = 2, y = 8$<br>$x = \frac{1}{2}, y = \frac{1}{2}$<br>a curve with $2x^2$ : a fraction pair |
| <b>i</b> Solve<br>$y = x^2 + 1$ and $y = 2x$<br><br>$x = 1, y = 2$<br>the line touches: one pair      | <b>j</b> Solve $xy = 6$<br>and $x + y = 5$<br><br>$x = 2, y = 3$<br>$x = 3, y = 2$<br>a product xy                   | <b>k</b> Solve<br>$x^2 + y^2 = 20$ and $y = 2x$<br><br>$x = 2, y = 4$<br>$x = -2, y = -4$<br>squaring a term: $(2x)^2 = 4x^2$ | <b>l</b> Solve<br>$x^2 + y^2 = 5$<br>and $y = 3x - 5$<br><br>$x = 1, y = -2$<br>$x = 2, y = 1$<br>$(3x - 5)^2$ in a circle                         |

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