

# Simultaneous Equations Mega Sheet

Solve the following simultaneous equations.

1.  $x + y = 3$   
 $x^2 + y^2 = 5$

$$(x, y) = (1, 2) \text{ or } (x, y) = (2, 1)$$

2.  $x - 4y = 2$   
 $3 = 5x - 2y$

3.  $2x + y = 1$   
 $x^2 + y^2 = 2$

4.  $x + 2y = 1$   
 $x^2 + 2y^2 = 3$

$$(x, y) = (-1, 1) \text{ or } (x, y) = \left(\frac{5}{3}, -\frac{1}{3}\right)$$

5.  $x - 3y = 2$   
 $4x - y = 1$

$$(x, y) = \left(\frac{1}{11}, -\frac{7}{11}\right)$$

6.  $x - 3y = 2$   
 $y^2 - x^2 = -4$

$$(x, y) = (2, 0) \text{ or } (x, y) = \left(-\frac{5}{2}, -\frac{3}{2}\right)$$

7.  $2x + y = 3$   
 $4x^2 + y^2 = 5$

$$(x, y) = (1, 1) \text{ or } (x, y) = \left(-\frac{1}{2}, 4\right)$$

8.  $2x - 3y = 2$   
 $3x + y = 1$

$$(x, y) = \left(\frac{5}{11}, -\frac{4}{11}\right)$$

9.  $x + 2y = 3$   
 $3x^2 + 4y = 6$

$$(x, y) = \left(0, \frac{3}{2}\right) \text{ or } (x, y) = \left(\frac{2}{3}, \frac{7}{6}\right)$$

10.  $2x - y = 4$   
 $x^2 + 2y^2 = 17$

11.  $x + 3y = 7$   
 $x^2 + x + y = 21$