

ALGEBRA

SIMULTANEOUS EQUATIONS

1. Solve the pair of simultaneous equations:

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

$$y = 7x + 5.$$

2. Solve the pair of simultaneous equations:

$$y = x^2 + 4x - 3$$

$$y = 5x + 3.$$

3. Solve the simultaneous equations:

$$y = 2x^2 - 3x - 5$$

$$y = 1 - 4x.$$

4. Solve the simultaneous equations:

$$y = 2x^2 + 3x - 31$$

$$y = 21 - 2x.$$

5. Solve the pair of simultaneous equations:

$$y = 2x^2 + 5x - 13$$

$$y = x + 17.$$

6. Solve the pair of simultaneous equations:

$$x - y = 2$$

$$xy = 15.$$

7. Solve the simultaneous equations:

$$y - x = 5$$

$$xy = 36.$$

8. Solve the simultaneous equations:

$$x + y = 14$$

$$xy = 45.$$

9. Solve the pair of simultaneous equations:

$$3x + 2y = 19$$

$$xy = 15.$$

10. Solve the pair of simultaneous equations:

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

$$xy = 8.$$

11. Solve the simultaneous equations:

$$x^2 + y^2 = 24$$

$$y = 2x + 3.$$

12. Solve the simultaneous equations:

$$x - y = 3$$

$$xy - 5x + y = -13.$$

13. Solve the pair of simultaneous equations:

$$2x^2 - 3y^2 = 5xy$$

$$-3x + y = 5.$$

14. Solve the pair of simultaneous equations:

$$-3x + y - 8 = 0$$

$$2x^2 + 3x - y = 0.$$

15. Solve the simultaneous equations:

$$x^2 + y^2 = 5$$

$$2y = x - 3.$$

16. Given that $x^2 - y^2 = 144$ and $x + y = 9$.

Determine the values of

(a) $x - y$

(b) $x^2 + y^2 - 2xy$.

ANSWERS

- $x = 4$ when $y = 33$
 $x = -\frac{1}{2}$ when $y = 1\frac{1}{2}$
- $x = 3$ when $y = 18$
 $x = -2$ when $y = -7$
- $x = 1\frac{1}{2}$ when $y = -5$
 $x = -2$ when $y = 9$
- $x = 4$ when $y = 13$
 $x = -6\frac{1}{2}$ when $y = 34$
- $x = 3$ when $y = 20$
 $x = -5$ when $y = 12$
- $x = 5$ when $y = 3$
 $x = -3$ when $y = -5$
- $x = 4$ when $y = 9$
 $x = -9$ when $y = -4$
- $x = 5$ when $y = 9$
 $x = 9$ when $y = 5$
- $x = 3$ when $y = 5$
 $x = 3\frac{1}{3}$ when $y = 4\frac{1}{2}$
- $x = 2$ when $y = 4$
 $x = -2\frac{2}{3}$ when $y = -3\frac{1}{3}$
- $x = 0.91$ when $y = 4.82$
 $x = -3.31$ when $y = -3.62$
- $x = 5$ when $y = 2$
 $x = 2$ when $y = -1$
- $x = -1$ when $y = 2$
 $x = -1\frac{7}{8}$ when $y = -\frac{5}{8}$
- $x = 2$ when $y = 14$
 $x = -2$ when $y = 2$
- $x = -1$ when $y = -2$
 $x = 2\frac{1}{3}$ when $y = -\frac{2}{3}$
- $x - y = 16$
 $(x - y)^2 = 256$