

Simultaneous Equations

Question 1

By drawing graphs of these equations on squared paper, solve each pair of simultaneous equations.

(a) $x + y = 8$
 $y = x$

(b) $x + 2y = 7$
 $4x - y = 10$

(c) $x + 3y = 0$
 $x - 2y = 5$

Question 2

Solve these simultaneous equations algebraically:

(a) $x + y = 20$
 $x - y = 4$

(b) $x - 3y = -1$
 $x + 3y = 11$

(c) $2x + y = 10$
 $-2x + y = -10$

(d) $v + 3w = 7$
 $2v - w = 0$

(e) $2p + 3q = 19$
 $4p - 7q = -27$


(f) $2x - 3y = 1$
 $3x + 2y = -5$

(g) $5s + 3t = 19$
 $7s - 2t = 8$

(h) $4x - 3y - 1 = 4$
 $3x + 4y - 10 = 0$

Question 3

Write down a pair of simultaneous equations for each picture, then solve them to answer the question. (Use £ x and £ y to represent the cost of one of each item).

(a) 
Total cost £36


Total cost £28

Find the cost of: (i) one spider. (ii) one turtle.

(b) 5 pairs of compasses and 2 pairs of scissors together cost £2.30.
3 pairs of compasses along with 3 pairs of scissors cost £2.10.

Find the cost of: (i) one pair of compasses. (ii) one pair of scissors.

Answers

Question 1

(a) (4,4) (b) (3,2) (c) (3,-1)

Question 2

(a) (12,8) (b) (5,2) (c) (5,0) (d) (1,2) (e) (2,5)
(f) (-1,-1) (g) (2,3) (h) (2,1)

Question 3

(a) $3x + y = 36$ $2x + y = 28$ spider £8 turtle £12
(b) $5x + 2y = 2 \cdot 30$ $3x + 3y = 2 \cdot 10$ compasses 30p scissors 40p