

Answer on Question #80672 – Math – Algebra

Solve the following pairs of simultaneous equations graphically using a line graph

Question 1

1)

$$3q+2q=5$$

$$q-p=5$$

Solution

An algebraic method of solution

$$\begin{cases} 3q + 2q = 5 & (1) \\ q - p = 5 & (2) \end{cases}$$

$$\begin{cases} 5q = 5 \\ p = q - 5 \end{cases}$$

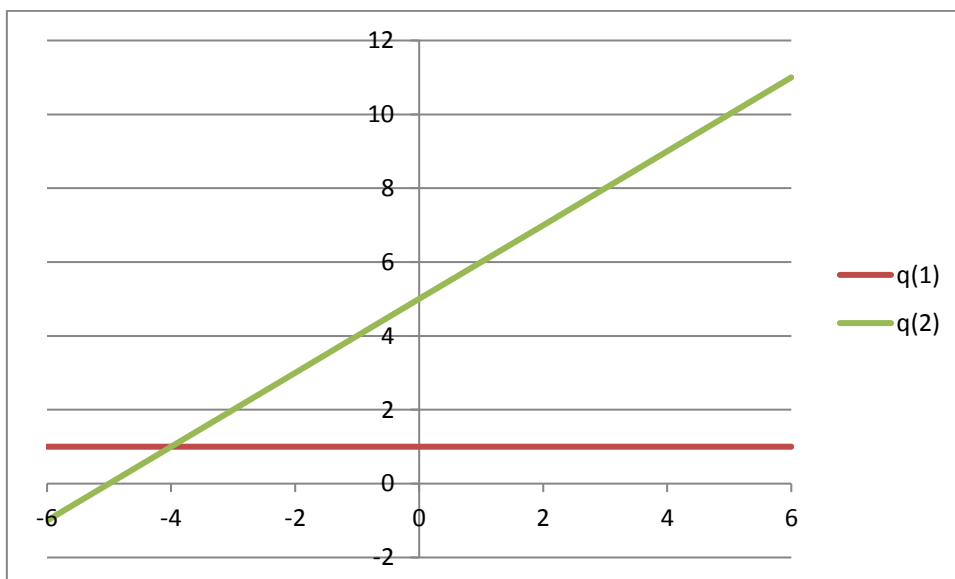
$$\begin{cases} q = 1 \\ p = 1 - 5 = -4 \end{cases}$$

Answer: (-4, 1)

A graphical method of solution

Table for the first and the second equation below

p	q(1)	q(2)
-6	1	-1
-4	1	1
-2	1	3
0	1	5
2	1	7
4	1	9
6	1	11



Question 2

2)

$$\begin{aligned} \frac{1}{4}x + \frac{3}{8}y &= -1 \\ x + y &= 0 \end{aligned}$$

Solution

An algebraic method of solution

$$\begin{cases} \frac{1}{4}x + \frac{3}{8}y = -1 & (1) \\ x + y = 0 & (2) \end{cases};$$

$$\begin{cases} \frac{1}{4}x + \frac{3}{8}y = -1; \\ x = -y \end{cases}$$

$$\begin{cases} -\frac{2}{8}y + \frac{3}{8}y = -1; \\ x = -y \end{cases}$$

$$\begin{cases} \frac{1}{8}y = -1; \\ x = -y \end{cases}$$

$$\begin{cases} y = -8 \\ x = -y = 8 \end{cases}$$

Answer: (8, -8)

A graphical method of solution

Table for the first and the second equation below

x	y(1)	y(2)
-10	9,333333	10
-8	8	8
-6	6,666667	6
-4	5,333333	4
-2	4	2
0	2,666667	0
2	1,333333	-2

