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PURE MATH

ALGEBRA AND FUNCTION

Level & Board	EDEXCEL (A-LEVEL)
TOPIC:	SIMULTANEOUS
PAPER TYPE:	SOLUTION 2
TOTAL QUESTIONS	8
TOTAL MARKS	38

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<u>Simultaneous 2</u>

 $2x - y = 14 \rightarrow (i)$ $3x + 2y = 70 \rightarrow (ii)$ From equation (i) 2x - y = 14 $\Rightarrow \quad y = 2x - 14$ Substituted in equation (ii), we have 3x + 2(2x - 14) = 70 3x + 4x - 28 = 70 7x = 70 + 28 7x = 98x = 14

To get "y", simply use the value of "x" in any of the equations.

 $\Rightarrow 2x - y = 14$ $\Rightarrow 2(14) - y = 14$ $\Rightarrow 28 - 14 = y$ y = 14s. s = {14,14}

Q.2

As,

 $3a + 2b = 3 \rightarrow (i)$ $2a + b = 1 \rightarrow (ii)$

Multiply (ii) by 2,

 $4a + 2b = 3 \rightarrow (iii)$ Subtract (iii) from (i) 3a + 2b = 3(-) 4a + 2b = 2 -a = 1 $a = -1 \rightarrow (iv)$ Subtract (iv) in to (i) 3a + 2b = 3 3(-1) + 2b = 3 2b = 6 $\Rightarrow \qquad b = 3$ Thus, Q.3

Given equations

$$-5x + 6y = 13 \rightarrow (i)$$

$$5x + 2y = 11 \rightarrow (ii)$$
Adding (i) and (ii)
$$-5x + 6y = 13$$

$$5x + 2y = 11$$

$$8y = 24$$

$$\Rightarrow \quad y = 3 \text{ put in (ii)}$$

$$5x + 2(3) = 11$$

$$5x + 6 = 11$$

$$5x + 6 = 11$$

$$5x = 5$$

$$\Rightarrow \quad x = 1$$
Hence s.s = {1,3}

Q.4

Given,

$$x = y - 5 \rightarrow (i)$$

$$x + y = 5 \rightarrow (ii)$$
Equation (i) put in (ii)
$$y - 5 + y = 5$$

$$2y = 10$$

$$y = 5$$
 put in (i)
$$x = 5 - 5$$

$$x = 0$$
Hence, s. s = {0,5}

Q.5

Given equation

$$2x + 3y = 8 \rightarrow (i)$$

$$2x + 5y = 12 \rightarrow (ii)$$

Subtract (i) and (ii)

$$2x + 3y = 8$$

$$2x + 5y = 12$$

$$-2y = -4$$

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www.chemistryonlinetuition.com y = 2The value of y put in (i) 2x + 3(2) = 8 2x + 6 = 8 2x = 2 x = 1Thus,

 $s.s = \{1,2\}$

Q.6

As

 $y = 10 + x \rightarrow (i)$ $2x - y = 5 \rightarrow (ii)$ Equation (i) put in (ii) 2x - (10 + x) = 5 2x - 10 - x = 5 x = 15 put in (i) y = 10 + 15 y = 25Thus,

 $s.s = \{15.25\}$

Q.7

As

 $4y + 8x = 12 \rightarrow (i)$ $3y - 5x = 20 \rightarrow (ii)$ Using equation (i) 4y + 8x = 12 4y = 12 - 8x $y = \frac{12 - 8x}{4}$ $\Rightarrow \quad y = 3 - 2x \rightarrow (iii)$ Equation (iii) put in equation (ii) 3(3 - 2x) - 5x = 20

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$$9 - 6x - 5x = 20$$

 $-11x = 11$
 $x = -1$ Put in (iii)
 $y = 3 - 2(-1)$
 $y = 3 + 2$
 $y = 5$

Hence,

 $s.s = \{-1,5\}$

Q.8

As

 $2x - 3y = 1 \rightarrow (i)$ $3x + 2y = 8 \rightarrow (ii)$ Multiply 2(i) and 3(ii) we get 4x - 6y = 2 9x + 6y = 24 $13x = 26 \implies x = 2$ The value of x put ln (ii) 3(2) + 2y = 8 2y = 2 y = 1Thus, $s.s = \{2,1\}$

I am Sorry !!!!!



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