Lesson 13

13.1 Revision

GCSE Mathematics Simultaneous Equations I

Marks Available : 100		
Question 1 Simplify;		
(i)	(8) + (5) + (4) + (7)	
(ii)	(26) + (-9) + (-4) + (-3)	[2 marks]
(iii)	(7) - (12) + (2) - (5)	[2 marks]
(iv)	(4) + (-7) + (8) + (-1)	[2 marks]
(v)	(-3) + (13) - (-8)	[2 marks]
(vi)	(8) - (-5) - (2)	[2 marks]
(vii)	(6x) + (4y) + (8x) + (5y)	[2 marks]
(viii)	(25x) - (8x) - (4x)	[2 marks]
(i x)	(12y) - (-7y) + (5y)	[2 marks]
(x)	(-14m) + (-3m) - (-5m)	[2 marks]
Question 2		[2 marks]
The not going to not do nothing ! What does this sentence simplify to ?		[2 marks]

Solve these equations;

(i) 8x + 17 = 57 (ii) 5y - 13 = 17

[2, 2 marks]

(iii) 6k + 34 = 10 (iv) 3m + 8 = -13

[2, 2 marks]

 $(\mathbf{v}) - 8g + 11 = -37$ $(\mathbf{vi}) 14 + 4z = 16$

[2, 2 marks]

(vii) 22 - 12x = 13 (viii) 17 - 7h = 22

[2, 2 marks]

(ix) 27 + 24v = 36 (x) - 9p - 8 = -62

[2, 2 marks]

Solve these pairs of simultaneous equations by ADDITION;

$$(\mathbf{i}) \qquad \begin{array}{c} x + y = 11 \\ x - y = 5 \end{array}$$

[2 marks]

$$(ii) \qquad 5y + 4x = 70 \\ 3y - 4x = 10 \end{cases}$$

[2 marks]

(iii)
$$7y + 2x = 29$$

 $11y - 2x = 43$

[2 marks]

$$(iv) \qquad \begin{array}{c} 3y + 6x = 20 \\ -3y + 2x = 4 \end{array} \right\}$$

[2 marks]

Solve these pairs of simultaneous equations by SUBTRACTION;

(i)
$$5y + 7x = 19$$

 $2y + 7x = 16$

[3 marks]

(ii)
$$\begin{array}{c} 4x + 5y = 7 \\ 2x + 5y = 1 \end{array}$$

[3 marks]

(iii)
$$\begin{array}{c} 6y + 10x = 8\\ y + 10x = 18 \end{array}$$

[3 marks]

(iv)
$$6y + 5x = -11 \\ 2y + 5x = -7 \end{cases}$$

[3 marks]

Solve these pairs of simultaneous equations;

(i)
$$12x + y = 64 \\ 5x - 2y = 17$$

[3 marks]

(ii)
$$\begin{cases} 10y - 5x = 35 \\ 11y + 10x = -8 \end{cases}$$

[3 marks]

(iii)
$$7x + 9y = 139$$

 $2x + 3y = 44$

[3 marks]

$$(iv) \qquad \begin{array}{c} 6y + 11x = 41 \\ 3y + 2x = -4 \end{array}$$

[3 marks]

Solve these pairs of simultaneous equations;

(i) 3x + 2y = 304x - 3y = 23

[4 marks]

(ii)
$$3y + 2x = -16$$

 $4y + 5x = -5$

[4 marks]

(iii)
$$\begin{cases} 5x - 3y = 31 \\ 2x + 4y = 2 \end{cases}$$

[4 marks]

$$(iv) \qquad \begin{array}{l} 2y + 5x = 10 \\ 3y - 2x = -230 \end{array} \}$$

[4 marks]

Use simultaneous equations to find the value of each symbol in the puzzle;



[5 marks]

Question 9

At a dog show, there were dogs and people. At the show there were 400 heads and 1042 legs. How many dogs were at the show ?

[5 marks]

This document is a part of a Mathematics Community Outreach Project initiated by Shrewsbury School It may be freely duplicated and distributed, unaltered, for non-profit educational use In October 2020, Shrewsbury School was voted "Independent School of the Year 2020" © 2021 Number Wonder

Teachers may obtain detailed worked solutions to the exercises by email from mhh@shrewsbury.org.uk