Year 10 Mathematics Learning Journey: Unit 5 - Simultaneous Equations

Step 1: More than one solution

Two numbers add together to give 45. One number is bigger than the other. List some possible solutions.

Step 2: Is (x,y) a solution?

Does the point (3,14) lie on the line y = 3x + 5?

Step 3: Substituting a known variable

h + j = 25
3h – j = 27
j = 12
Find *h*.

Step 4: Substitution into an expression

By substitution, find the values of *x* and *y* in the equations
x + y = 7 and y - x = 5

Step 5: Solve by using graphs

Can there be more than one pair of solutions to the pair of simultaneous equations: y = 2x and x + y = 9

Step 6: Solve by subtracting equations

3x + y = -2
3x + 2y = 2

Step 7: Solve by adding equations

6x + 2y = 12
6x – 2y = 0

Step 8 (R): Related facts from an equation

Alex uses the equation 6s – 2t = 4 to form the equation 12s – 2t = 8. Find her mistake and correct it.

Step 9: Solve by adjusting one equation

Multiply one equation to make the coefficient of *x* or *y* the same.
3x + 2y = 4
4x + y = 9

Step 10: Solve by adjusting both equations

Solve
12x – 5y = -22
-8x + 4y = 16

Steps 11 & 12: Form and solve linear equations

1000 tickets are sold for a concert. Adult tickets are £10 and Child tickets are £6. £7304 was collected through ticket sales. Form and solve a pair of linear equations.

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