Mathematics

Simultaneous equations - trial and error

Mr Coward

Try this

1 $2x + 3y = 24$

When $x =$ ☐ $y =$ ___

2 $5x + 3y = 42$

When $x =$ ☐ $y =$ ___

0 3 5 7 9 12

Subsitute each of these x values into each of these equations to find y.

Find each x value state whether 1 or 2 have the greater y value.

What do you notice? What other x values could you try?

Independent task

1) Use the table of values to find which two integers x lies in between.

Write your answer as an inequality.

a)

$2x + y = 18$	x	0	1	2	3	4	5
	y						
$6x + y = 32$	x	0	1	2	3	4	5
	y						

b)

$3x + 4y = 1$	x	-4	-3	-2	-1	0	1
	y						
$6x + 10y = 5$	x	-4	-3	-2	-1	0	1
	y						

c) Solve the simultaneous equations from (a) and (b) to check your solutions.

Independent task

2) Use the table of values to find the value of x to one decimal place.

$3x + 4y = 21.59$	x	1.6	1.65	1.7	1.75	1.8	1.85
	y						
$2x + 5y = 23.96$	x	1.6	1.65	1.7	1.75	1.8	1.85
	y						

Explore

Substitute x = 2 and x = 7 to find the y values for each pair of simultaneous equations.

$$5x + 2y = 13$$
$$7x - y = 3$$

$$7x + 6y = 2$$
$$2x + 5y = -29$$

$$2x - 8y = -22$$
$$3x + 7y = 43$$

Decide which inequality statement each satisfy.

The lines meet when $2 < x < 7$

The lines meet when $x < 2$

The lines meet when $x > 7$

Can you describe what happens to the y value for each inequality.