Year 9

Home Learning 4

Focus for this week: Translate shapes on co-ordinate paper and use flow diagrams to draw linear graphs

Essential learning:	• To draw shapes onto a co-ordinate grid
Practising:	• To translate (move) shapes on a co-ordinate grid • Use a flow diagram to make a pattern
Learning about:	• Use a flow diagram to make a table of values • Use a table of values to draw straight line graphs
Extension:	• Draw a straight line graph from an equation, using a table of values

Tasks:

- Look at the learning objectives, reflect on what you are already confident with, what you would like to practise and what you would like to learn this week
- Choose 2-3 worksheets to complete this week and email them to Mr. Croft
- Login to MyMaths and complete MyMaths tasks
- Spend 10 minutes a day on Times Table Rock Stars; Numbots OR Sumdog
- Please email a photo of any worksheets or poster you complete to the email address below. *This will earn you a golden token.*

Additional activities:

- Play 'Countdown' (e.g. https://nrich.maths.org/6499) on your own or with someone else
- Play Battleships
- Play https://www.mangahigh.com/en-gb/games/graphsofthegalaxy
- Go to: https://student.desmos.com?prepopulateCode=5x745q for a challenging activity

If you have queries about this work, please contact me at acroft@bower-grove.kent.sch.uk

Worksheet 1 To draw shapes onto a co-ordinate grid

Create the following shapes on the co-ordinate grid, then write their co-ordinates in the space provided:

Small Square: (…., ….) (….., …..) (….., …..) (….. , …..)

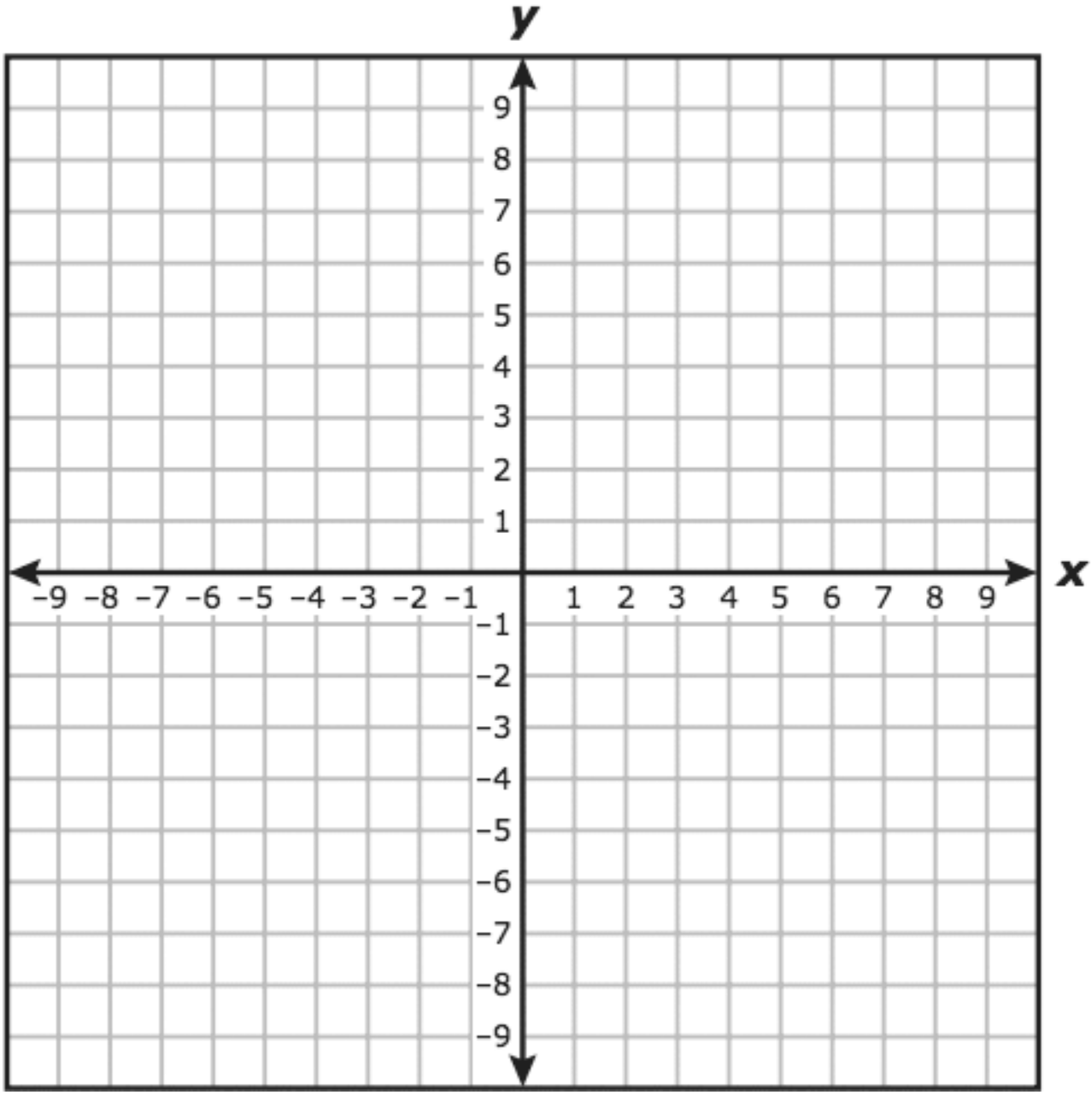
Small Triangle: (…..., …..) (….. , …..) (….., ……)

Large Square: (…., ….) (….., …..) (….., …..) (….. , …..)

Large Triangle: (…..., …..) (….., …..) (….. , …..)

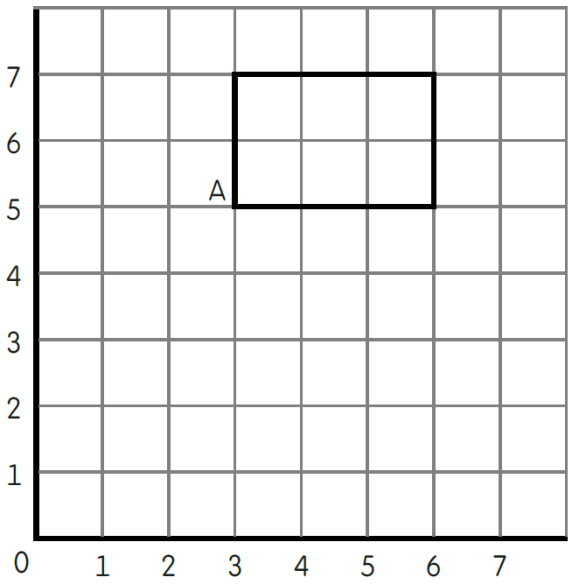
Rectangle: (…., ….) (….., …..) (….., …..) (….. , …..)

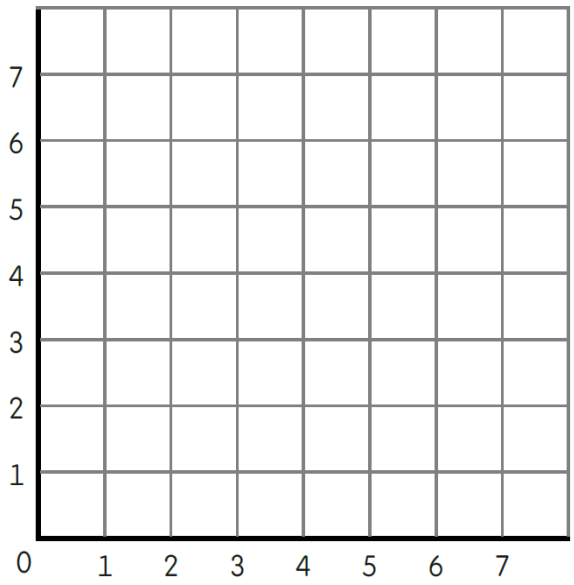
Kite: (…., ….) (….., …..) (….., …..) (….. , …..)



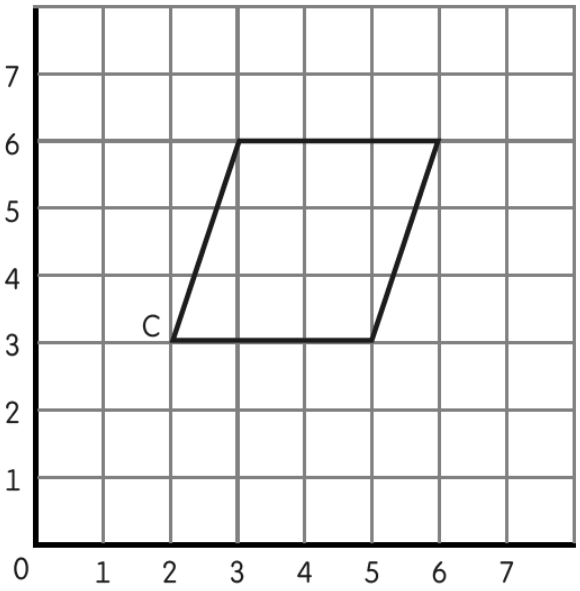
Please email completed worksheets to me at acroft@bower-grove.kent.sch.uk. Good attempts earn a golden token.

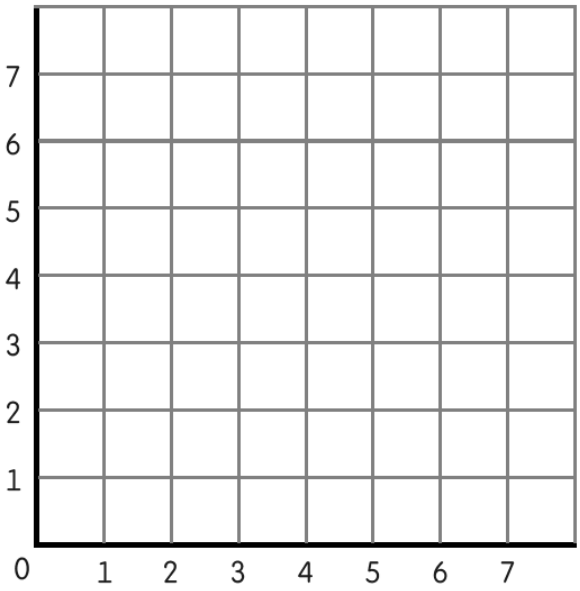
Worksheet 2: To translate (move) shapes on a co-ordinate grid



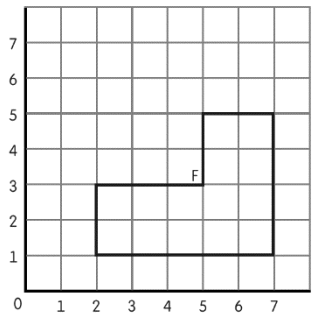


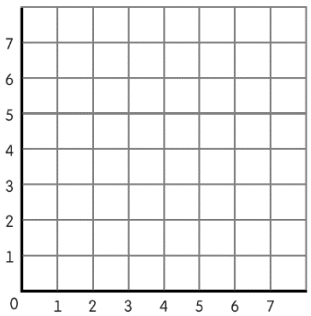
Move point A to (2,1)



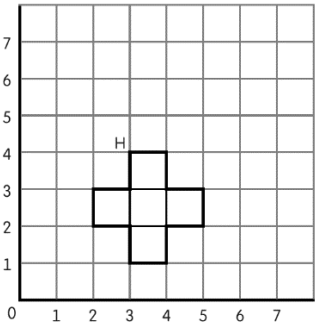


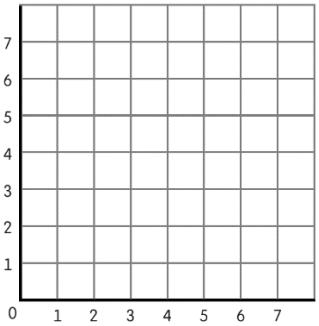
Move point C to (1,1)





Move point F to (4,5)





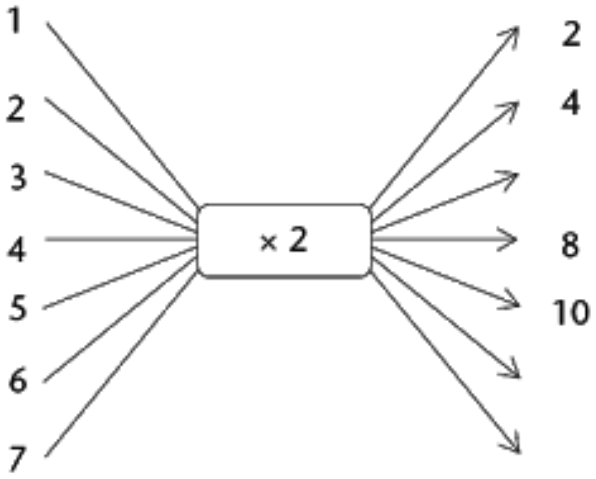
Move point H to (5,6)

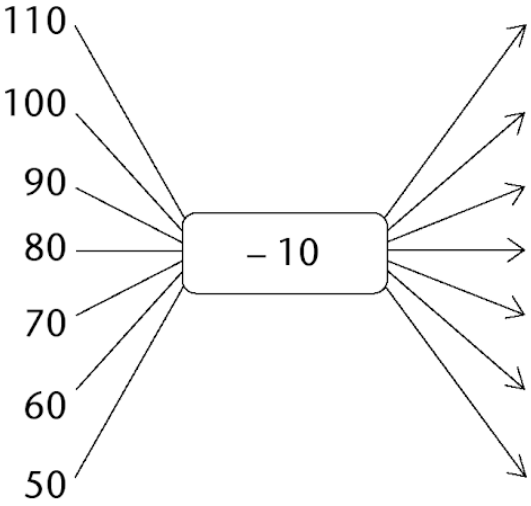
Please email completed worksheets to me at acroft@bower-grove.kent.sch.uk. Good attempts earn a golden token.

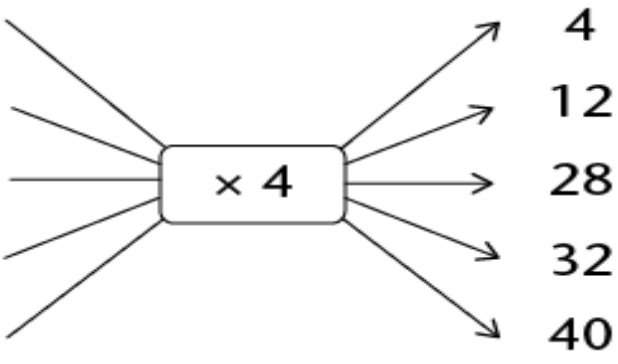
Worksheet 3: Use a flow diagram to make a pattern & Use a flow diagram to make a table of values

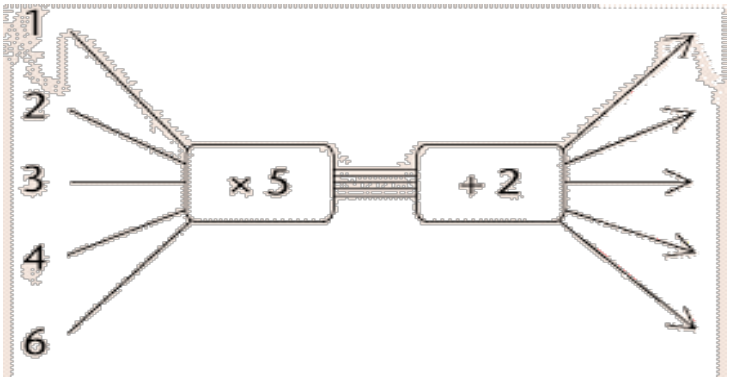
Task 1: Use a flow diagram to make a pattern

Fill in the missing numbers on these flow diagrams



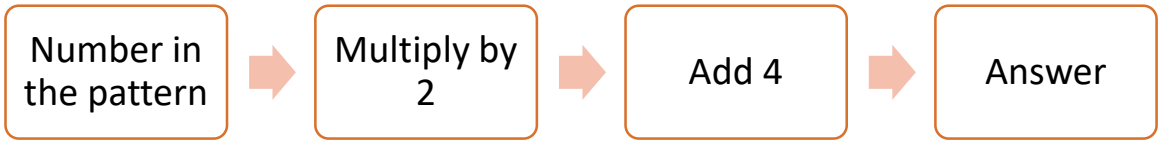






Task 2: Use a flow diagram to make a table of values

We can use a flow diagram to make number patterns. These can be used to draw straight lines on co-ordinate grids (we will learn about this later). Here is an example of a flow diagram



Use this flow diagram to complete this table of values:

Number in the pattern	Number to use at the start of the flow diagram	Calculation	Answer
1st number	1	1 x 2 + 4	6
2nd number	2	2 x 2 + 4	
3rd number	3		
4th number	4		
5th number	5		

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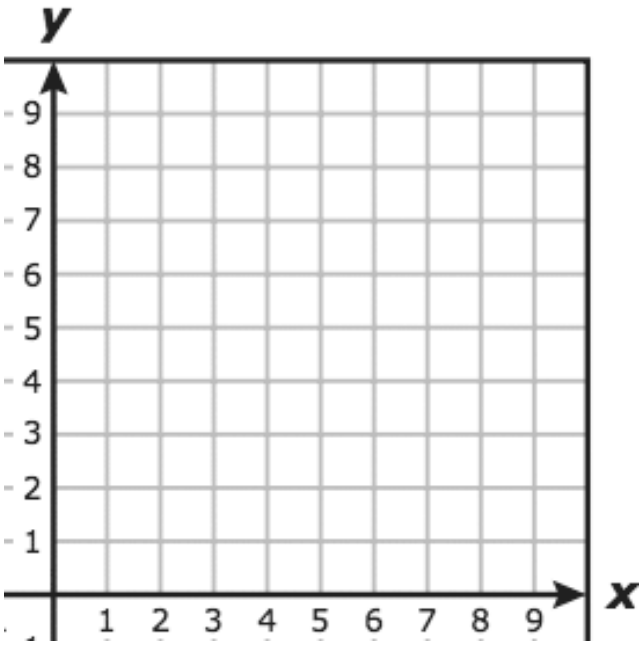
Worksheet 4: Use a table of values to draw straight line graphs

Task 1: The equation $y = 2x + 1$ has the following flow diagram

Value of x → Multiply by 2 → Add 1 → Value of y

Complete the table of values for this flow diagram using the values of *x* provided.

Value of x (number)	Calculation	Value of y (number)	Co-ordinate
0	0 x 2 + 1	1	(0,1)
1			
2			
3			
4			

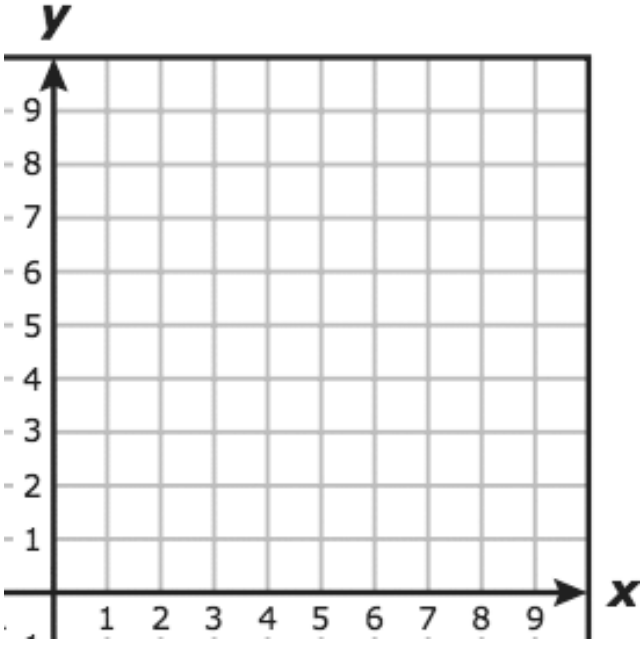


Task 2: The equation $y = 3x - 2$ has the following flow diagram

Value of x → Multiply by 3 → Subtract 2 → Value of y

Complete the table of values for this flow diagram using the values of *x* provided.

Value of x (number)	Calculation	Value of y (number)	Co-ordinate
1	1 x 3 - 2	1	(1,1)
2			
3			
4			



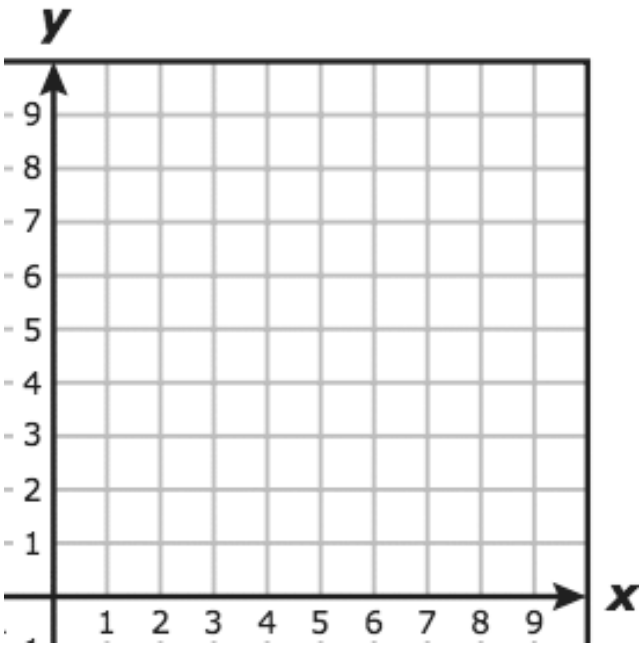
Now mark each co-ordinate on the grid below. They should make a straight line. Draw the straight line with a ruler. Please email completed worksheets to me at acroft@bower-grove.kent.sch.uk. Good attempts earn a golden token.

Worksheet 5: Draw a straight-line graph from an equation, using a table of values

Task 1: The equation $y = \frac{1}{2}x + 2$ has the following flow diagram

Complete the table of values for this flow diagram using the values of *x* provided.

Value of x (number)	Calculation	Value of y (number)	Co-ordinate
0		2	
1			$(1, 2\frac{1}{2})$
2			
3			
4	$4 \times \frac{1}{2} + 2$	4	

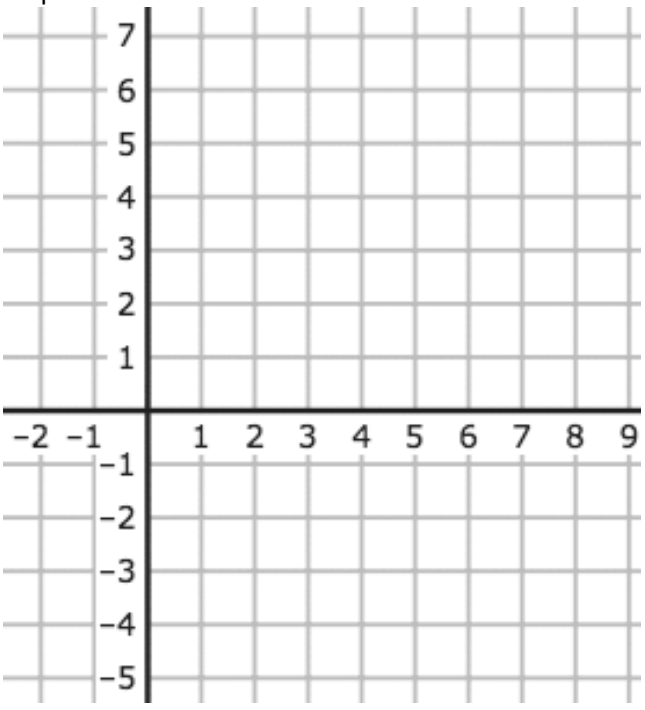


Task 2: Complete the flow diagram for the equation $y = 4x - 9$

Complete the table of values for this flow diagram using the values of *x* provided.

Value of x (number)	Calculation	Value of y (number)	Co-ordinate
1		-5	(1, -5)
2			
3			
4			

Now mark each co-ordinate on the grid below. They should make a straight line. Draw the straight line with a ruler.



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