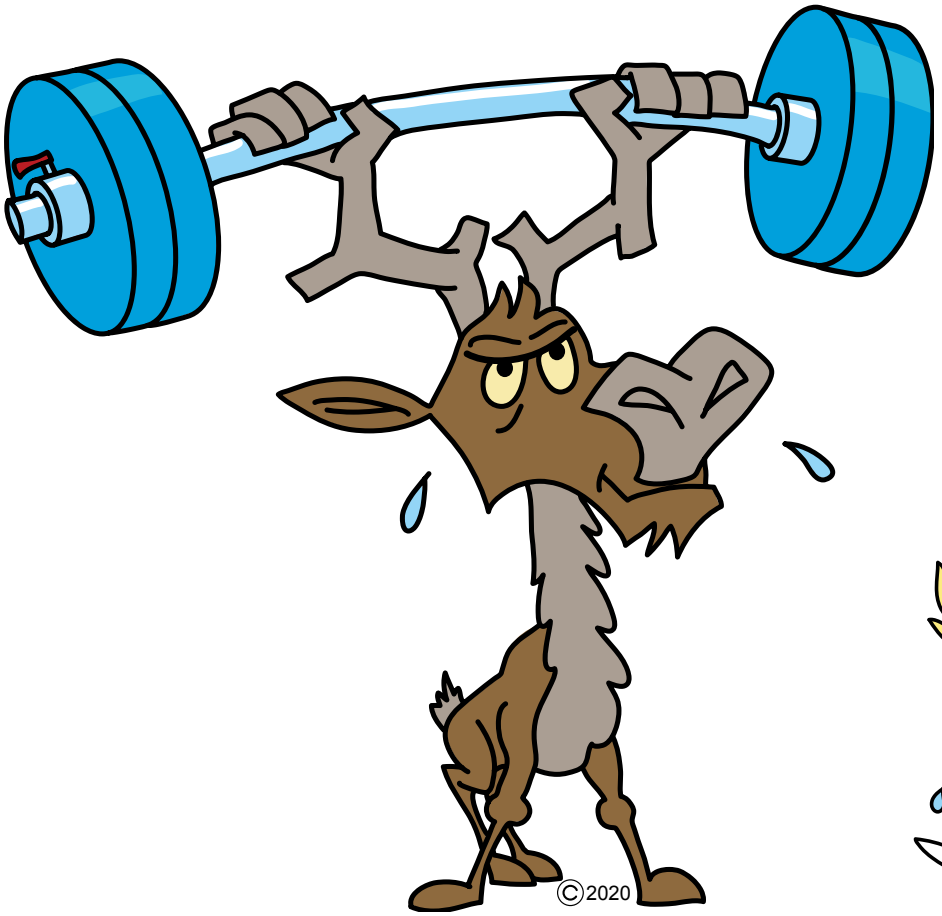
Colin and Coco's Daily Maths Workout

Workout 6.7

Properties of Shapes





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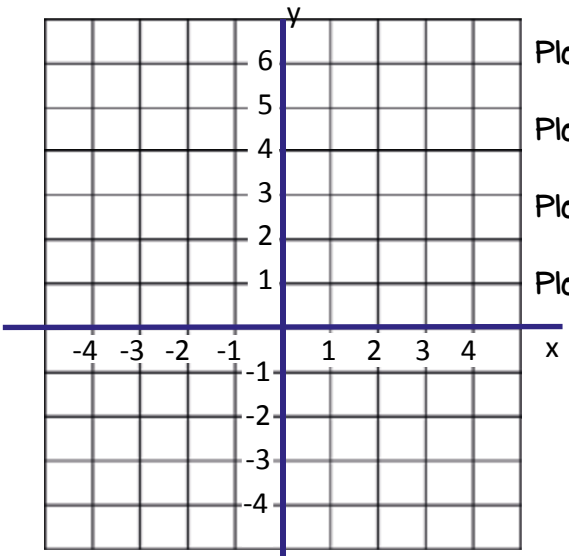
Shape Workout

Plot the points then find the point to finish the shape.

Workout A



Plot (2, 0) (4, 2) (2, 4) then make a square (,)

Plot (2, 4) (2, 6) (−2, 6) then make a rectangle (,)

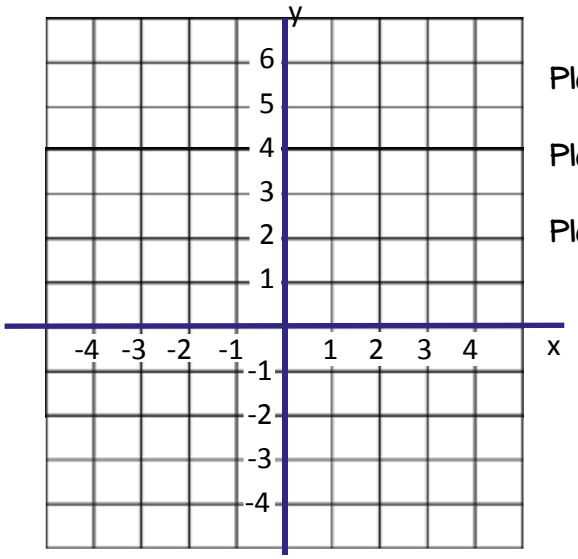
Plot (−3, −2) (−4, −1) (−3, 3) then make a kite (,)

Plot (−4, −4) (−2, −2) (3, −2) then make a parallelogram (,)

Shape Workout

Plot the points then find the point to finish the shape.

Workout B



Plot (−4, 1) (−4, 4) (−2, 6) then make a trapezium (,)

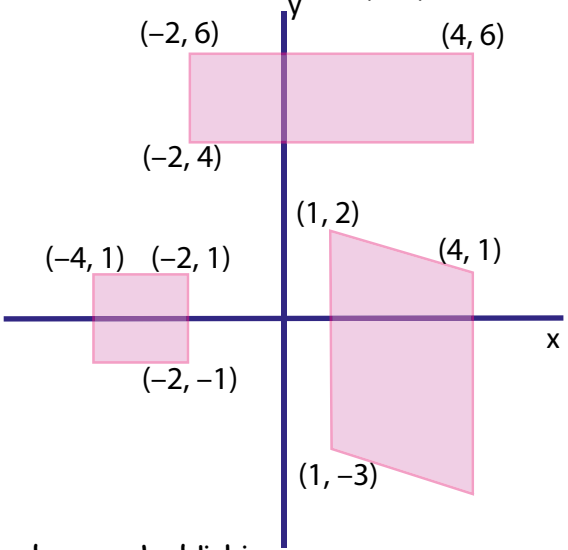
Plot (−1, 3) (1, 0) (3, 3) then make a rhombus (,)

Plot (3, −2) (−2, −3) (−3, −2) then make a kite (,)

Shape Workout

Use properties of shapes to calculate the missing coordinates.

Workout C



1. Rectangle: Missing coordinate is (,)

2. Square: Missing coordinate is (,)

3. Parallelogram: Missing coordinate is (,)

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Coordinate Challenge Game

You need:
Coordinate cards (on the next page)
Coordinate Challenge Board (on the next page)
A different coloured pencil for each player

To play:

Shuffle the cards and put them face down on the table.
Take turns to turn over two cards.
Use the numbers to make the coordinates of a point.
Plot your point on the grid.

I have turned over 3 and –2 so could plot (3, –2) or
I could plot (–2, 3)

To win:
The winner is the first player to plot three points in a straight line, horizontally or vertically. The three points do not have to be right next to each other.

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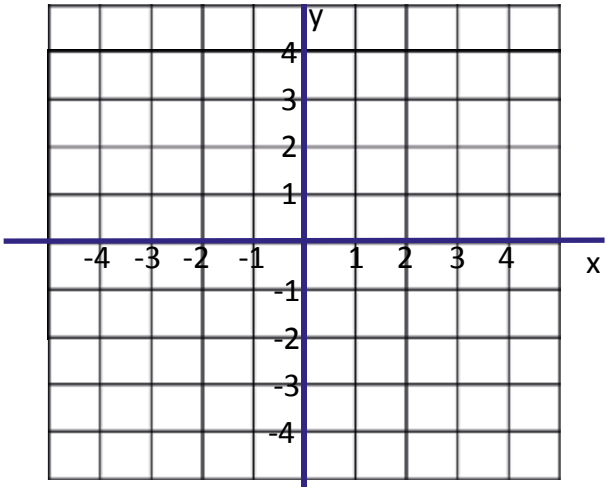
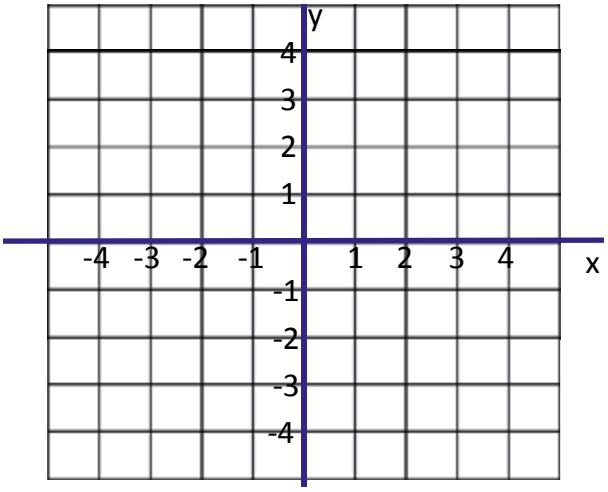
Coordinate Challenge Board





-4	-3	-2
-1	0	1
2	3	4

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Missing Number Workout

Workout E

Colin is making shapes by plotting points on a coordinate grid. Place digits in the empty boxes to complete the sets of coordinates in several ways.

Square	(3, 3)	(□, □)	(6, 6)	(□, □)
Parallelogram	(5, 2)	(□, □)	(6, 5)	(□, □)
Right-Angled Triangle	(1, 2)	(□, □)	(5, 4)	

Are there any boxes that it is impossible to put a 5 in? Why?

Are there any boxes that could have any of the digits in them?

Now complete all the coordinates together using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 once each.

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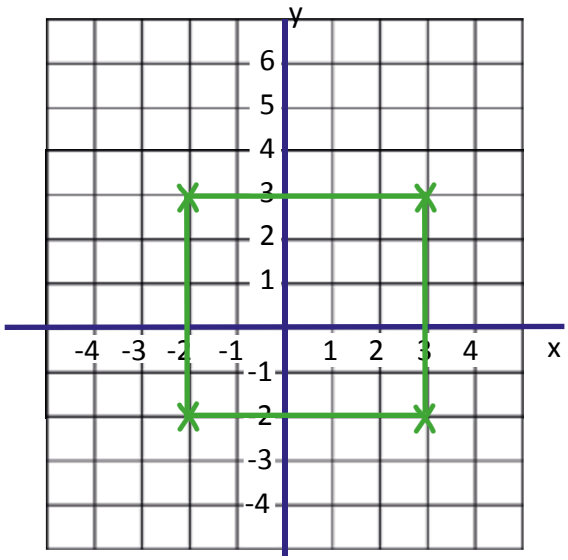
Quad Quads

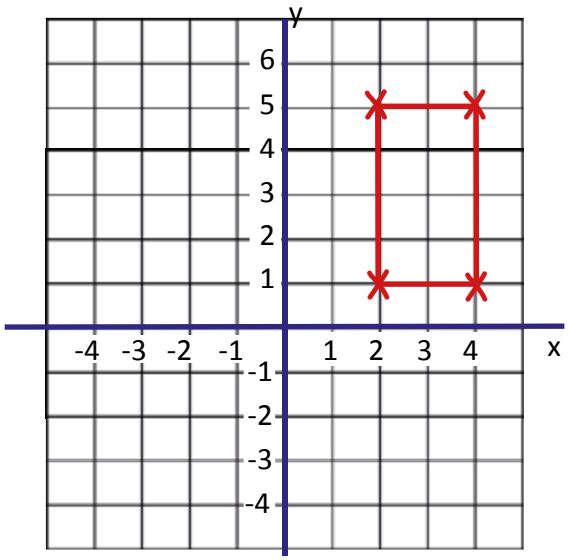
Workout F

Quad Quads are quadrialterals that are only allowed to to have one vertex in each quadrant.

This is a Quad Quad



This is not a Quad Quad



Find sets of coordinates that will make a:

Square	Parallelogram	Kite
Trapezium	Rhombus	

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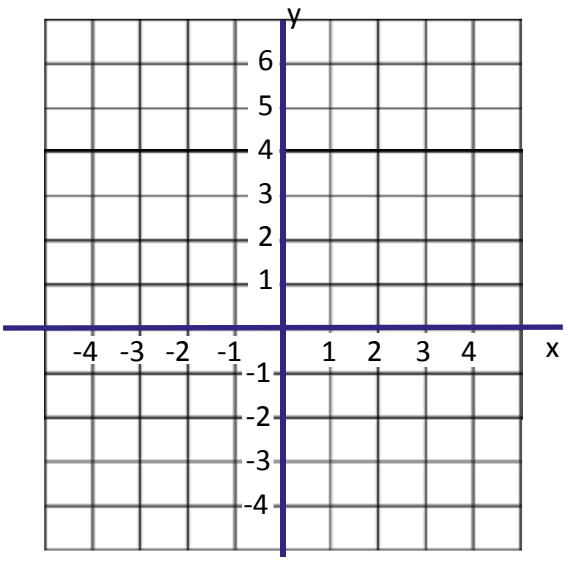
Word Problems

1. The vertices of a square have coordinates (1,1), (1,4), (5,4) and (a,b).
Find the values of a and b.

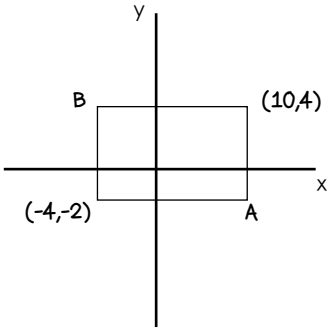
2. The vertices of a right-angled triangle have coordinates (2,y), (2,-4) and (-4,-4).
Find the value of y.

3. Two vertices of a square have coordinates (-3,4) and (3,4).
How many different squares can be made by plotting 2 more points?



4. The vertices of a rectangle ABCD are A (-2,3), B (-2,2), C (2,2) and D (-2,2).
Find the coordinates of a rectangle with one vertex at A but twice as large.

5. Find the coordinates of A and B.



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Workout H

Who am I?
Workout

Use the clues to work out Colin's mystery number.

You may want to cross numbers out on the 100 grid as you consider each clue.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1) I am even
2) I am not a factor of 30
3) I am not a cube number
4) I am not a multiple of 10
5) My digits are not equal
6) Only one of my digits is prime
7) I am not a square number
8) I am not a multiple of 8
9) The sum of my digits is a prime number
10) The difference in my digits is 7

Colin's mystery number is ☐

Create your own 'Who am I?' puzzle

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Please share your puzzle with Colin @MathsCanDo

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