



This week our concept is **geometry** - we're focusing on **Coordinates, reflection and translation**.

Have a go of some of the warm ups, read about the concept, and then try some of the different questions and problems! I've added some resources which may help!

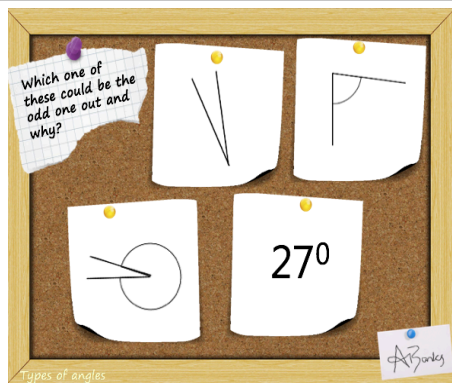
Remember... be systematic!

Miss Ellison & Miss Gibson

Warm Ups!

Beat SIRI! - 6, 7 and 8 times table.

The answer is... 8,654. What is the question?



Number of the day: 12,342

- Write it in words.
- Even or odd?
- Place value grid it.
- Draw it.
- Partition it.
- 10 more?
- 10 less?
- 100 more?
- 100 less?
- Write 2 equations to get this as the answer.

Times Table Bingo - 4 and 9 times table.
Put multiples in the bingo grid, say a question in the times table, mark off if they have it.

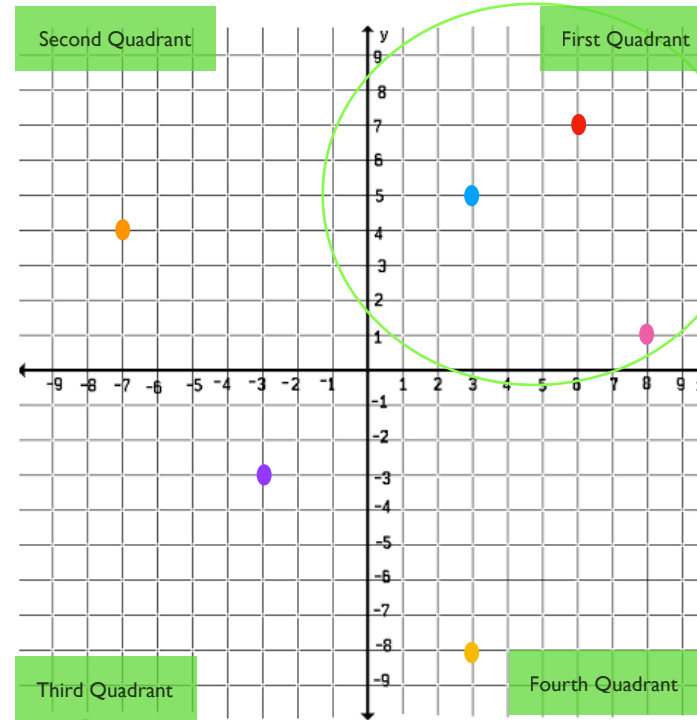
Coordinates are a set of values that show an exact position on a grid. Two numbers (the coordinates) are used to identify the position.

Coordinate are always written as the number of steps across first, then the number of steps up or down.

Grids have two axes - the x-axis (goes horizontally) and the y-axis (goes vertically). These axes are used to find the point.

Coordinates are always written in brackets, with the two numbers separated by a comma e.g. (4,2)

Coordinates



Coordinates in the First Quadrant
(Remember x axis first then y-axis)

Blue point - (3,5)
Red point - (6,7)
Pink Point - (8,1)

Notice the numbers in the first quadrant are positive.

Coordinates in Four Quadrants
(Remember x axis first then y-axis)

You will need to think about positive and negative numbers.

Yellow Point - (3, -8)
Purple point - (-3, -3)
Orange Point - (-7, 4)

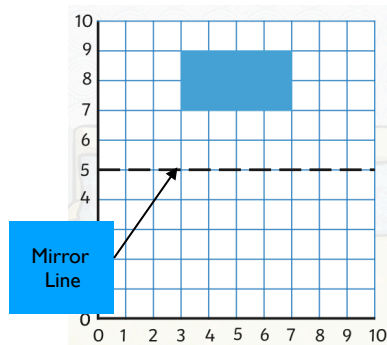
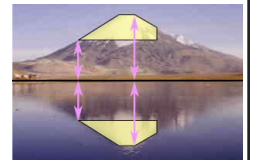
Reflection



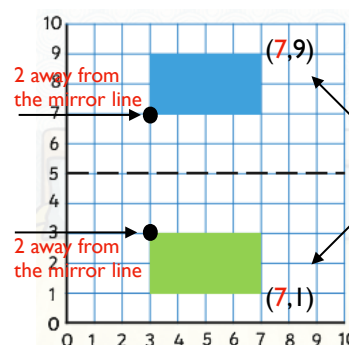
Reflections are everywhere ... in mirrors, glass and here in lakes.

Every point is the same distance from the central line and the reflection has the same size as the original image. The central line is called the **Mirror Line**. Mirror lines can be in any direction.

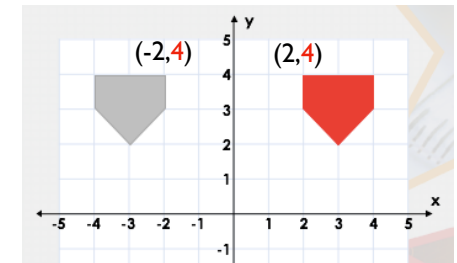
A reflection is a **flip** over the line.



Focus on one vertex at a time, counting the distance from the mirror line and repeating this distance across the mirror line, plot the points as you go to show the reflected shape



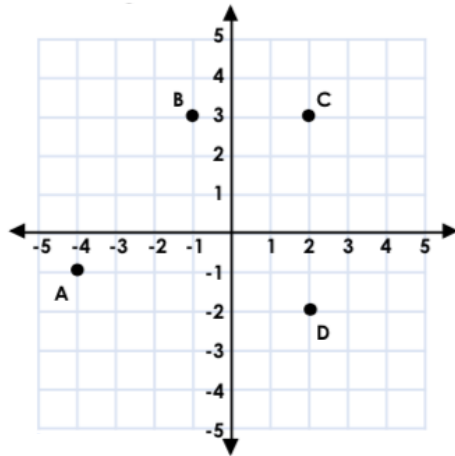
When reflecting a shape over a horizontal mirror line. The x coordinate is the same but the y coordinate changes.



When reflecting a shape over a vertical mirror line. The y coordinate is the same but the x coordinate changes.

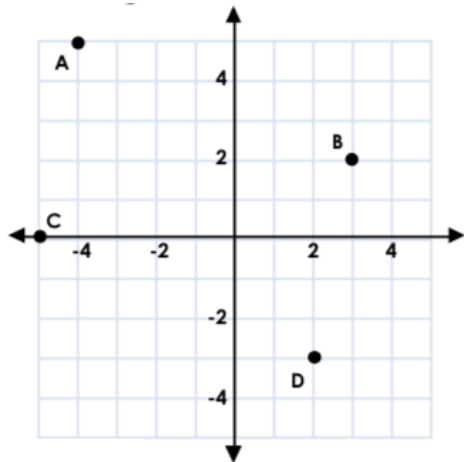
Coordinates

Match the coordinates to the point on the grid.



- (2, 3)
- (2, -2)
- (-1, 3)
- (-4, -1)
- (0, -3)

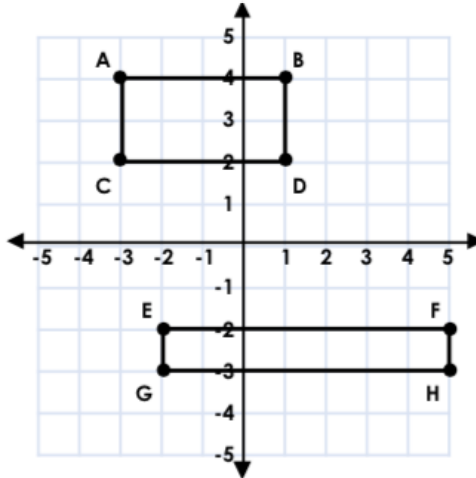
Match the coordinates to the point on the grid.



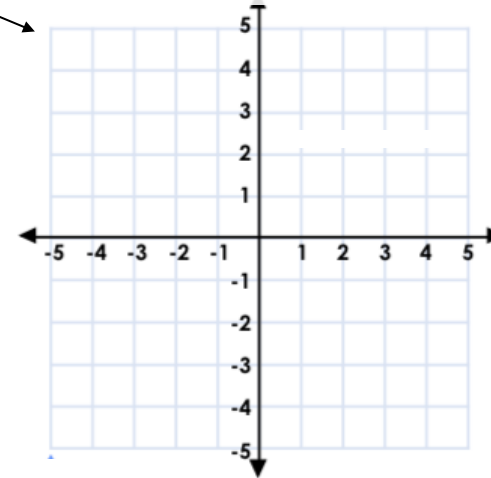
- (-4, 5)
- (2, -3)
- (2, 3)
- (-5, 0)
- (3, 2)

If don't have squared paper, you can leave this question.

Write the coordinates of both shapes.

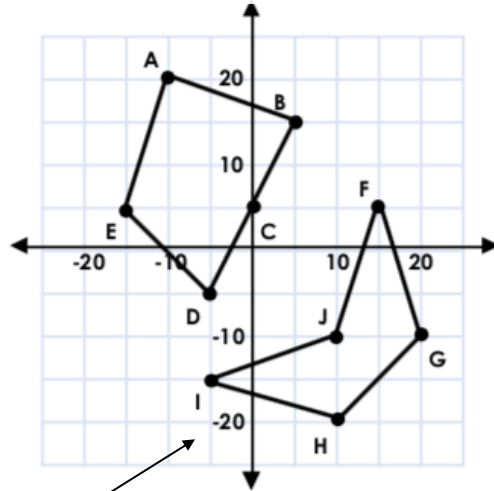


Plot the coordinates.

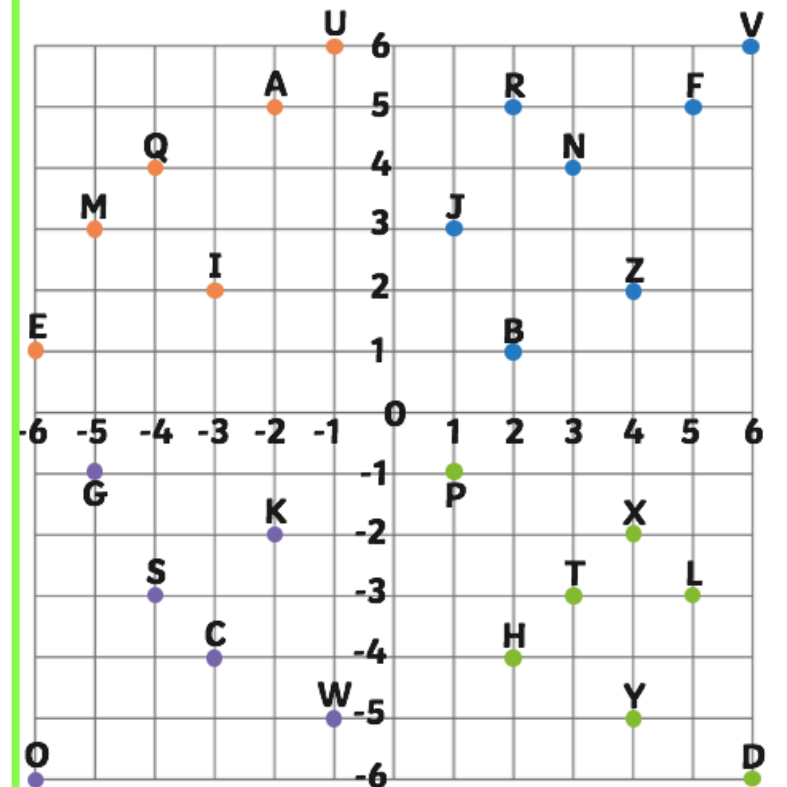


- A. (-1, 0)
- B. (-1, 4)
- C. (5, 0)
- D. (5, 4)

Write the coordinates of both shapes.



Look carefully at the intervals on the axes. What is each interval worth?

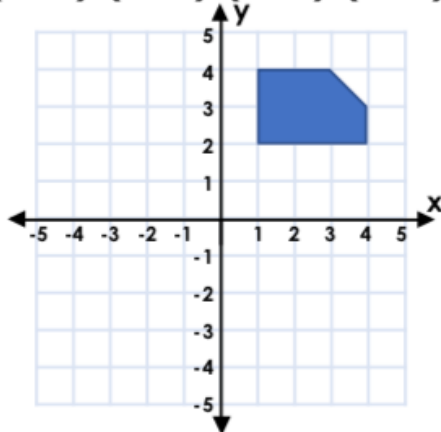


Write your friend a secret word or sentence in coordinates.

Reflection

True or false? If this shape is reflected in the y axis, the new coordinates will be

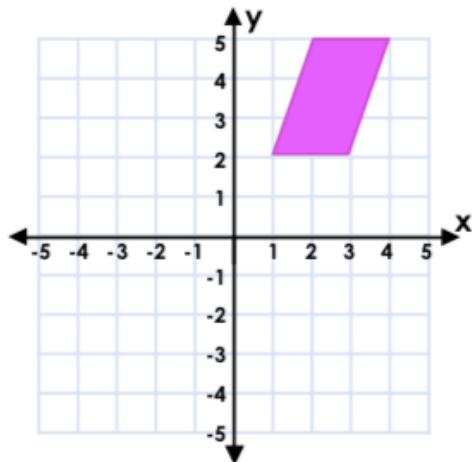
$(1, -2), (1, -4), (3, -4), (4, -2), (4, -3).$



Reflect this way



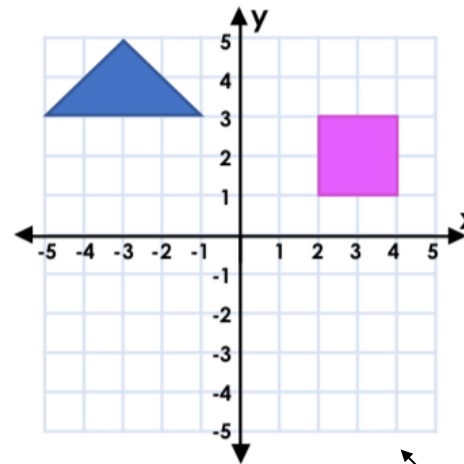
Reflect the shape in the x axis and complete the coordinates of the new shape.



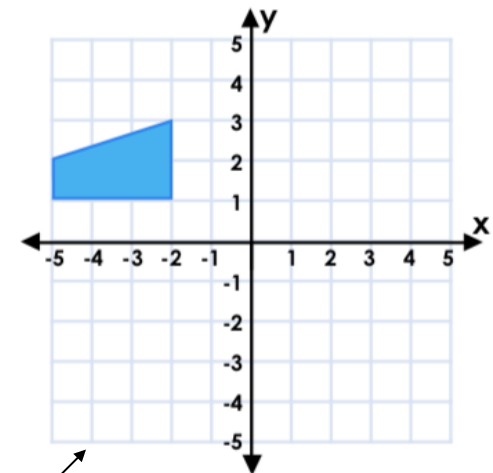
Reflect this way



Reflect both shapes in the y axis and draw the new shape.

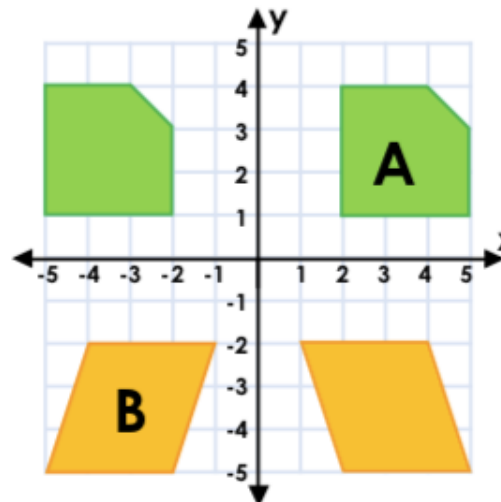


Reflect the shapes in the y axis then reflect both shapes in the x axis



If don't have squared paper, you can leave this question.

Shapes A and B are reflected in the y axis. Are the reflections correct?



Challenge

- If you reflect a square in a vertical line, which coordinates will change and which will stay the same? Why?
- Which coordinates will change if you reflect a square in a horizontal line?
- Investigate if this is the same for other shapes.

$(1, -2)$