

Problem of the Week: Week 1 (Sum1): Year 8: Graphs: linear and quadratic

- Interpret mathematical relationships both algebraically and graphically
- Use linear and quadratic graphs to estimate values of y for given values of x and vice versa
- Find approximate solutions to contextual problems from given graphs for a variety of functions

Please find 2 problems below

Problem 1:

Explore real life graphs

Each graph below shows the journey of two vehicles

What is the same and different between these two graphs?



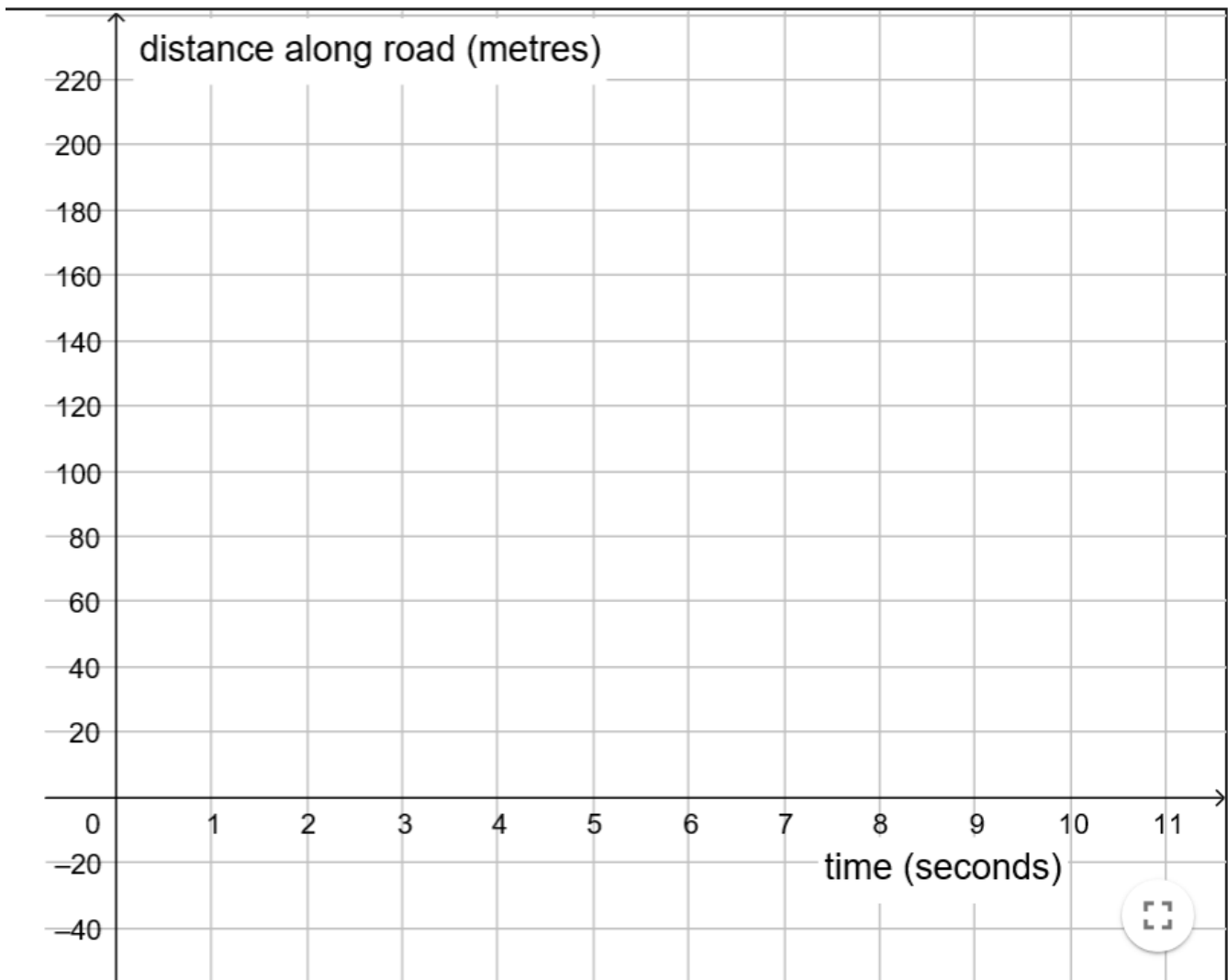
Could we have a graph that has a horizontal line?
A vertical line?
If so, what does it mean?

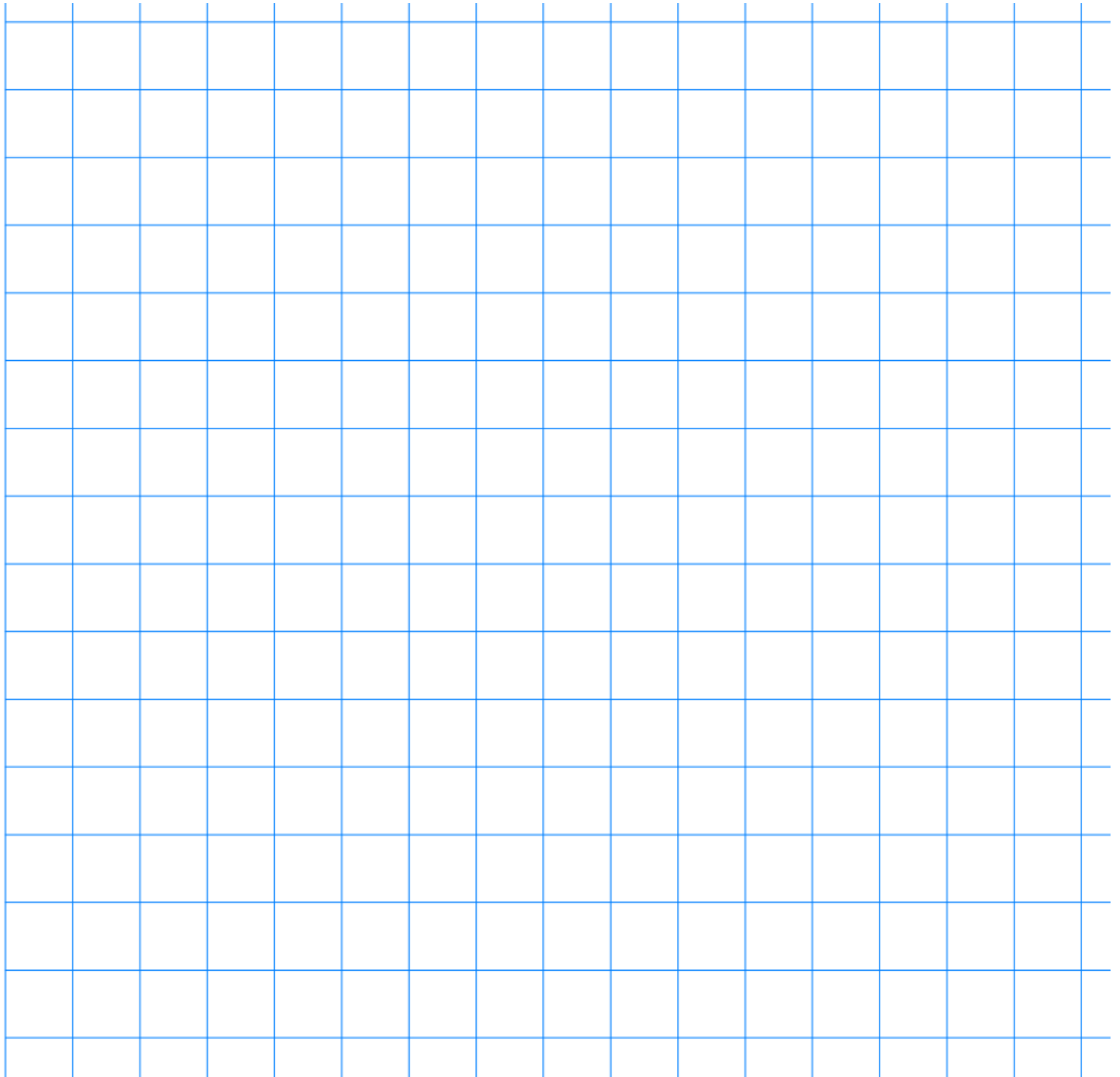
Write a short paragraph to explain what is happening in each graph

Draw your own graph and explain what is happening
Axes and square paper can be found below

You can explore this further with:

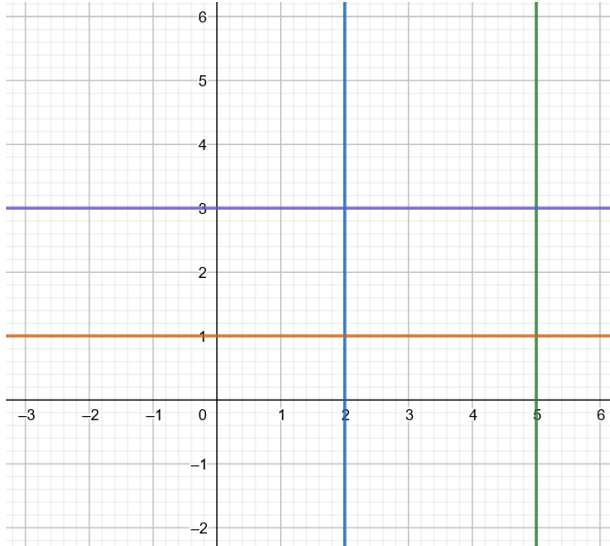
- <https://www.geogebra.org/m/AjWXqFVM>





Problem 2:

Write down the equations of four lines which will form a rectangle when they cross...a bit like this... (graph paper below to help with this, or use geogebra is free, <https://www.geogebra.org/graphing>)



Can you make another rectangle that is bigger / smaller than your first one?

Now investigate:

Can you make a square? What are the equations of the lines?

Can you make a different square, that is bigger / smaller than the first one?

What do you notice?

What other quadrilaterals can you make?

What are the equations of the lines you have used?

What do you notice?

What different polygons can you make using different straight lines?

What do you notice?

