

Graphs of Changing Areas

The graph on the first worksheet shows the curve $y = \frac{10}{x}$

What symmetry does the graph have? How do you know?

What happens to the graph as x gets very large? How do you know?

You could plot graphs of other curves such as:

$$y = \frac{5}{x} \quad y = \frac{20}{x}.$$

How would these graphs relate to the first graph?

Would the graphs intersect?

How do you know?

Rectangles of equal perimeter can be represented graphically by the line $y = \frac{1}{2}P - x$ where P is the perimeter.

Would you expect the line $y = \frac{1}{2}P - x$ to intersect with the curve

$$y = \frac{10}{x} \text{ for all values of } P?$$

How can you use the graph to find the smallest possible perimeter of a rectangle with an area of 10?