

Curves 1

a. Sketch the curve with equation

$$y = \frac{k}{x} \quad x \neq 0$$

where k is a positive constant.

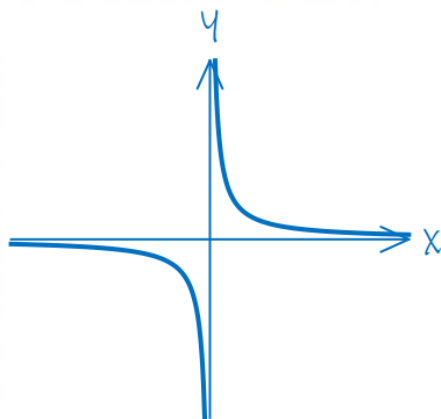
(2 marks)

b. Hence or otherwise, solve

$$\frac{40}{x} \leq 5$$

(3 marks)

a. If unsure about the shape of the graph, try a few values – make sure that there is a mix of positive and negative, and a range of sizes.



1 mark for getting the correct curve in one quadrant.

2 marks for the complete curve

b. All values of $x < 0$ satisfy the inequality $\frac{40}{x} \leq 5$

1 mark

For the part of the graph in the first quadrant:

$$\frac{40}{x} = 5$$

$$40 = 5x$$

$$x = 8$$

1 mark

All values of $x \geq 8$ also satisfy the inequality $\frac{40}{x} \leq 5$

$$x < 0 \text{ or } x \geq 8$$

1 mark