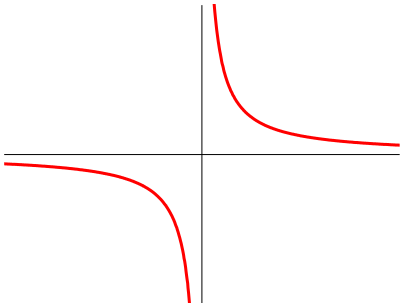
Edexcel AS Mathematics Graphs and transformations

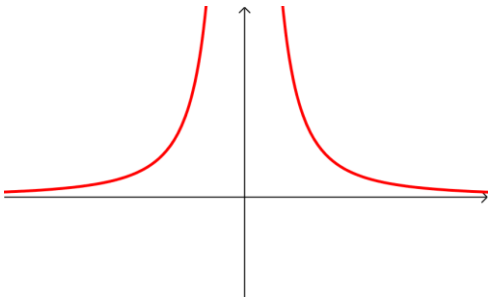
Section 1: Sketching curves

Solutions to Exercise level 1

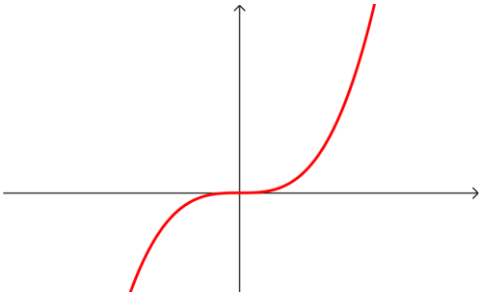
1. (i) $y = \frac{1}{x}$



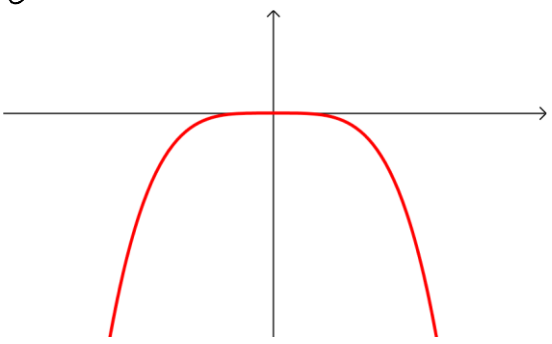
(ii) $y = \frac{2}{x^2}$



(iii) $y = 2x^3$

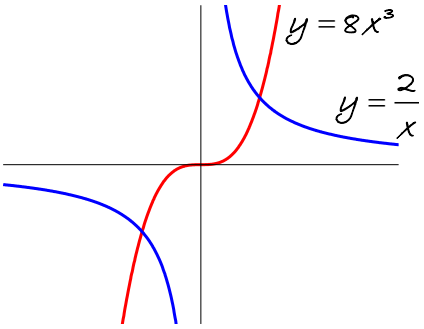


(iv) $y = -x^4$



Edexcel AS Maths Graphs 1 Exercise solutions

2. (i)



(ii) $\frac{2}{x} = 8x^3$

$2 = 8x^4$

$x^4 = \frac{1}{4}$

$x = \pm\frac{1}{\sqrt{2}}$

When $x = \frac{1}{\sqrt{2}}$, $y = 2\sqrt{2}$

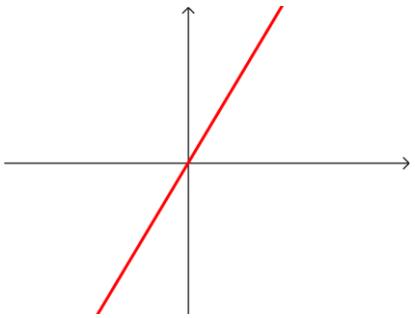
When $x = -\frac{1}{\sqrt{2}}$, $y = -2\sqrt{2}$

The points of intersection are $\left(\frac{1}{\sqrt{2}}, 2\sqrt{2}\right)$ and $\left(-\frac{1}{\sqrt{2}}, -2\sqrt{2}\right)$.

3. (i) $y = kx$

When $x = 2, y = 10 \Rightarrow 10 = 2k \Rightarrow k = 5$

$y = 5x$



(ii) When $x = 20$, $y = 5 \times 20 = 100$.

4. (i) $y = \frac{k}{x}$

When $x = 5, y = 2 \Rightarrow 2 = \frac{k}{5} \Rightarrow k = 10$

$y = \frac{10}{x}$

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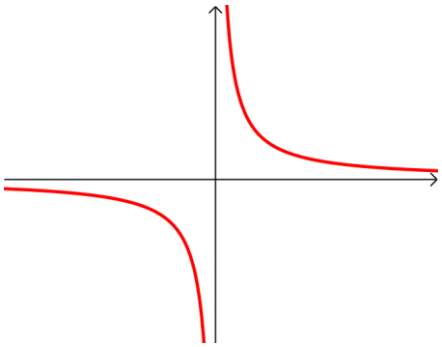

(ii) When $x = 4$, $y = \frac{10}{4} = 2.5$