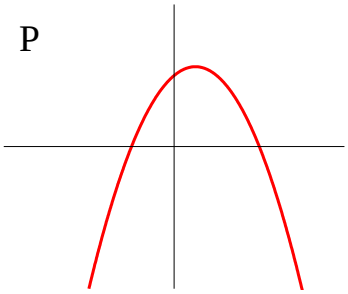
Edexcel AS Mathematics Graphs and transformations

Section 1: Sketching graphs of functions

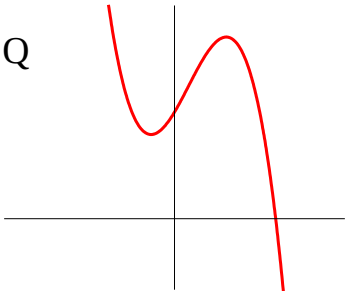
Section test

1. Look at the four graphs below.

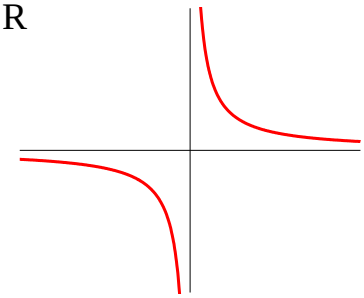
P



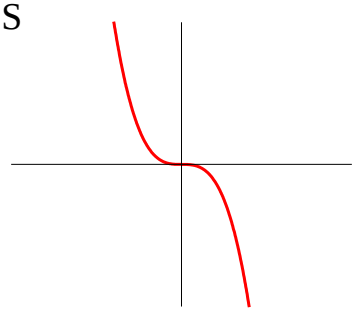
Q



R



S



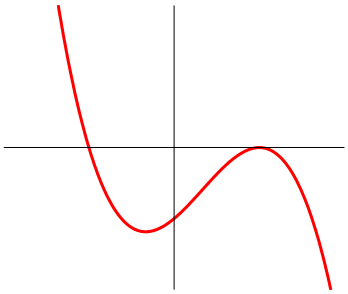
One of these graphs is of the form $y = kx^3$, where $k \neq 0$. Which one?

One of these graphs is of the form $y = ax^3 + bx^2 + cx + d$, where $a \neq 0$ and not all of b, c and d are zero. Which one?

One of these graphs is of the form $y = ax^2 + bx + c$, where $a \neq 0$. Which one?

One of these graphs is of the form $y = \frac{k}{x}$, where $k \neq 0$. Which one?

2. The equation of the graph below could be



(a) $y = 2(x+1)(x-1)$

(b) $y = (x+1)(x-1)^2$

(c) $y = (x-1)(x+1)^2$

(d) $y = -2(x+1)(x-1)^2$

3. Which of the following are intersection points of the graphs $y = x^3$ and $y = x(2x-3)(x+2)$? Choose as many as apply.

(0, 0) (2, 8) (-2, -8) (3, 27) (-3, -27)

Edexcel AS Maths Graphs 1 section test

4. The intersection points of the graphs $y = x + 2$ and $y = \frac{1}{x}$ are

(a) (1, 1) and (-1, -1)

(b) $\left(1+\sqrt{2}, 3+\sqrt{2}\right)$ and $\left(1-\sqrt{2}, 3-\sqrt{2}\right)$

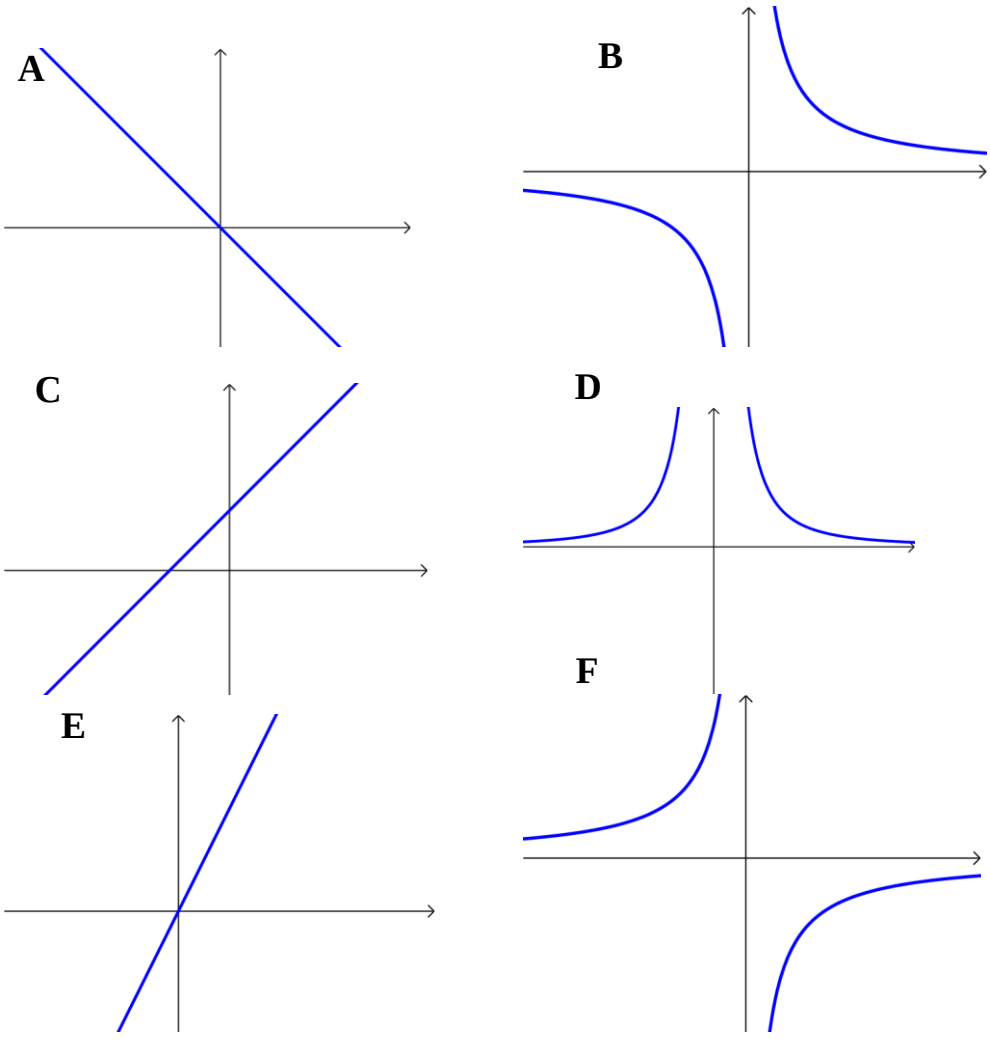
(c) $\left(-1+\sqrt{2}, 1+\sqrt{2}\right)$ and $\left(-1-\sqrt{2}, 1-\sqrt{2}\right)$

(d) (1, 3) and (-1, 2)

5. How many intersection points are there for the graphs $y = x(x-1)(x+1)$ and $y = \frac{1}{x}$?

6. Use sketch graphs to find the number of roots of the equation $\frac{1}{x} = x^2 + 1$.

Questions 7 and 8 are about the graphs shown below.



7. Which of the graphs show direct proportion?

Edexcel AS Maths Graphs 1 section test

8. Which of the graphs could show inverse proportion?

9. Given that y is directly proportional to the square of x, and that when $x = 2, y = 0.5$, find the value of y when $x = 5$.

10. Given that p is inversely proportional to q, and that when $p = 4, q = -2.5$, find the value of q when $p = 0.5$.