

Change of Sign

Functions will only change sign;

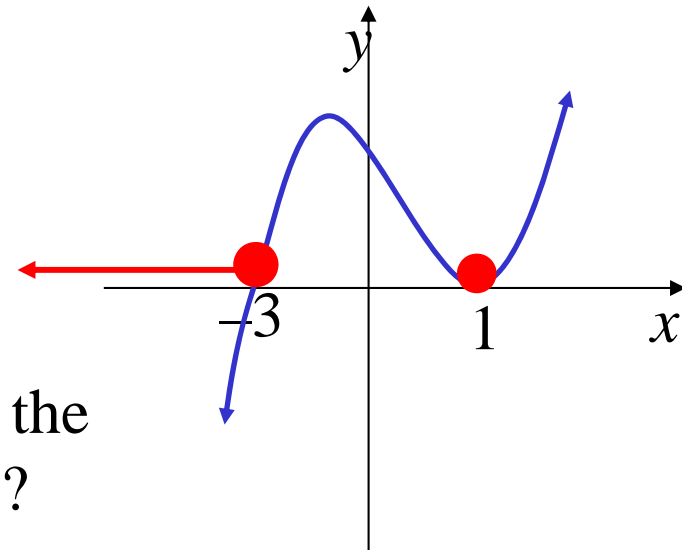
- at x -intercepts (zeroes)
- at discontinuities

Critical points of an inequation can be found by moving all terms to one side of the inequation and finding when the function created changes sign.

e.g. (i) $(x-1)^2(x+3) \leq 0$

$x \leq -3$ or $x = 1$

Q: for what values of x is the curve below the x axis?



$$(ii) \frac{2}{x+3} < 5$$

$$\frac{-13-5x}{x+3} < 0$$

$$\therefore x < -3 \text{ or } x > -\frac{13}{5}$$

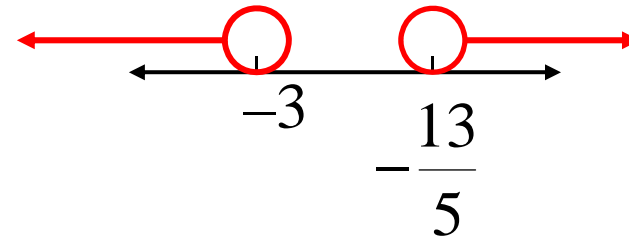
critical points are;

$$\text{zeroes: } -13 - 5x = 0$$

$$\text{discontinuities: } x + 3 = 0$$

$$x = -\frac{13}{5}$$

$$x = -3$$



**Exercise 5B; 1, 3bcf, 4ac, 5ac, 6,
7bdfh, 10ac, 11ac, 12**