## 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?


$$
\begin{aligned}
& \text { (ii) } \frac{2}{x+3}<5 \\
& \text { critical points are; } \\
& \text { zeroes: }-13-5 x=0 \quad \text { discontinuities: } x+3=0 \\
& -13-5 x<0 \\
& x+3 \\
& \therefore x<-3 \text { or } x>-\frac{13}{5} \\
& x=-\frac{13}{5}
\end{aligned}
$$

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

