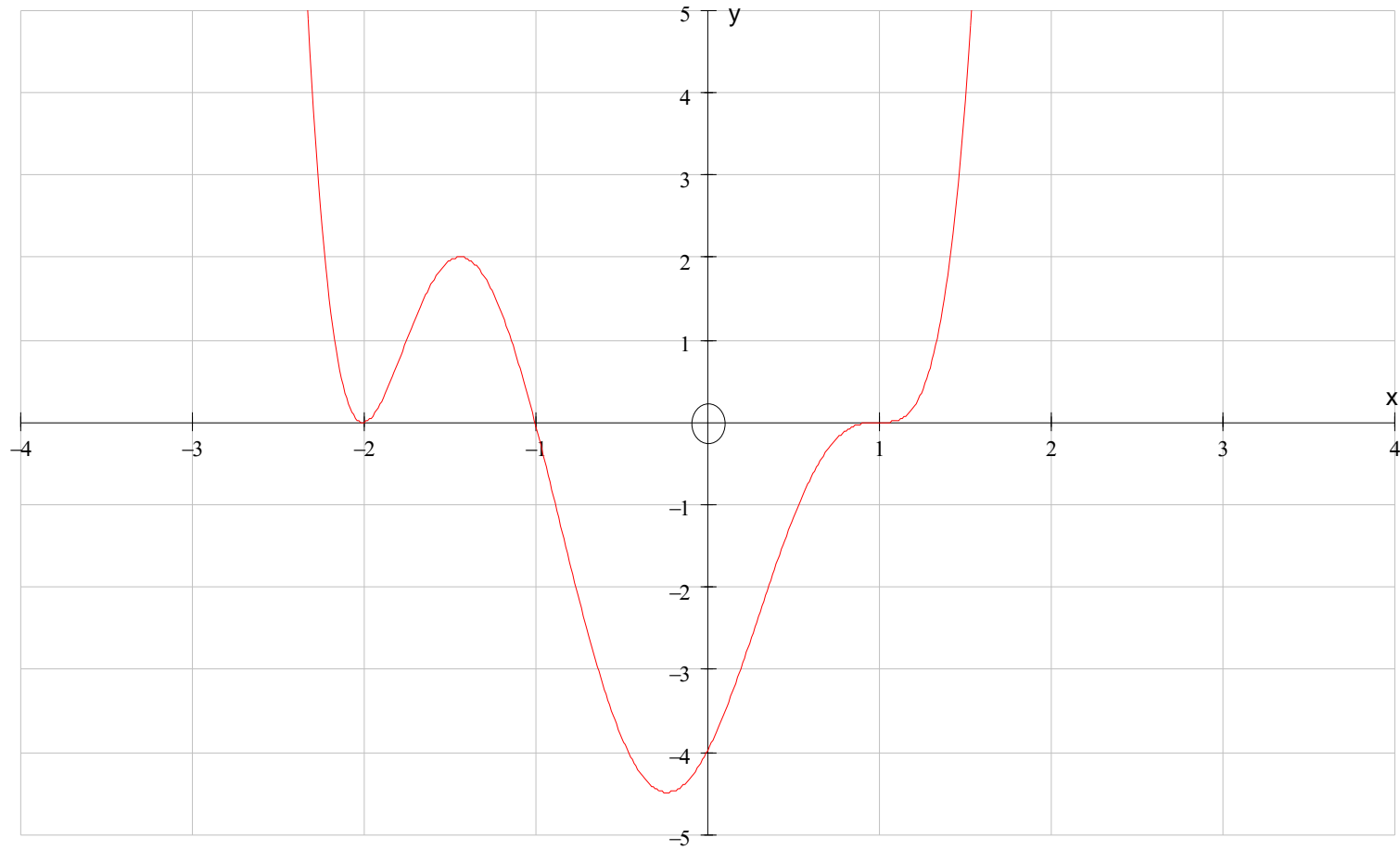# *Sketching Polynomials*

When drawing $y = P(x)$

- y intercept is the constant

- x intercepts are the roots, solve $P(x)=0$

- as $x \to \pm\infty$, $P(x)$ acts like the leading term

- even powered roots look like ⋁ or ⋀

- odd powered roots look like ⤵ or ⤴

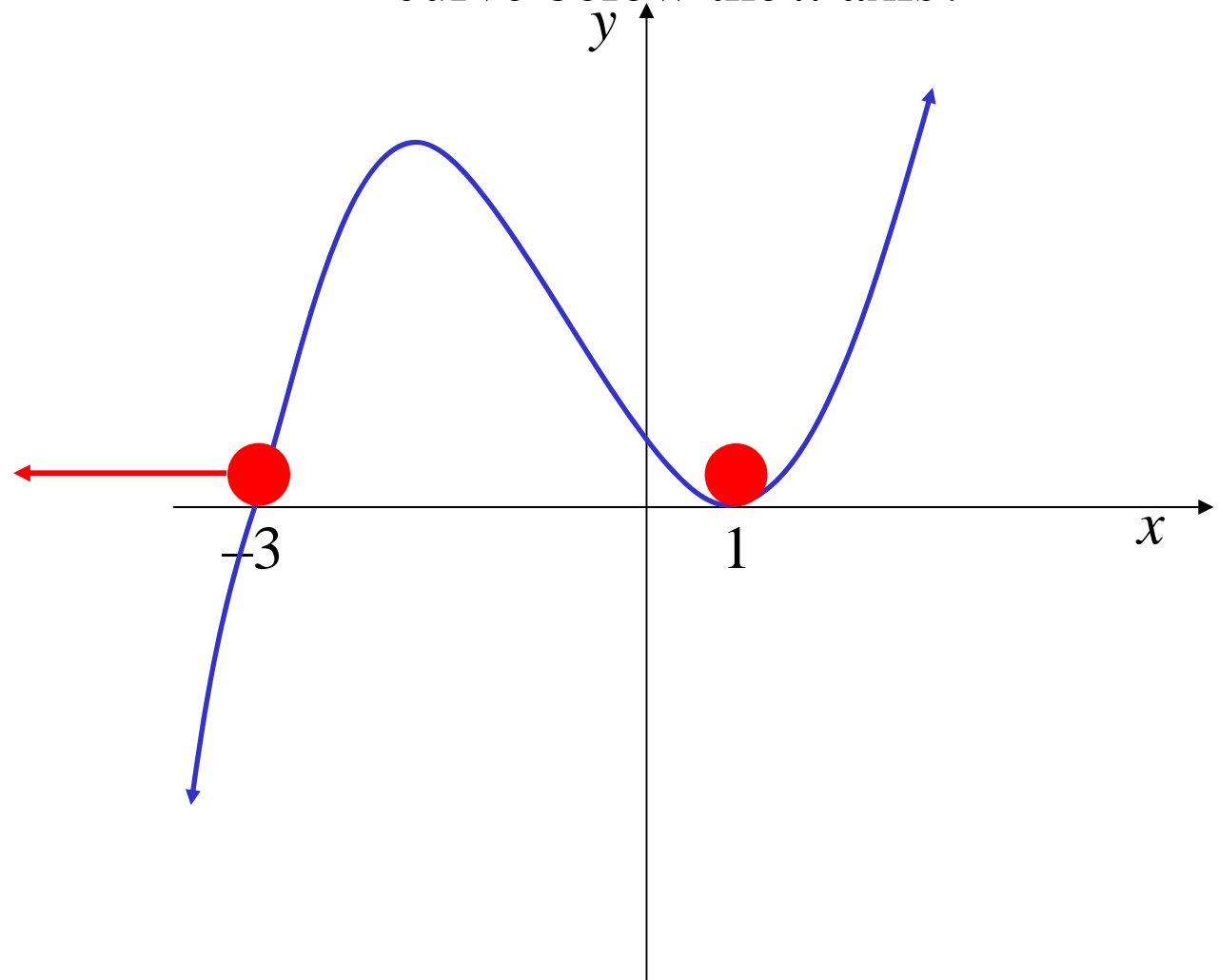- if the curve can be written as $(x-a)^n$, then it is a basic curve.

e.g. $y = (x+1)(x-1)^3(x+2)^2$

(ii) $(x-1)^2(x+3) \leq 0$

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

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

Exercise 3B; 2, 3, 4ac, 5ac, 6bdg, 7ac, 8