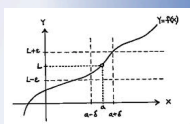
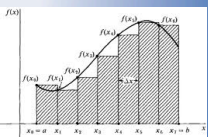


# 19 Curve Sketching



$$f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$$

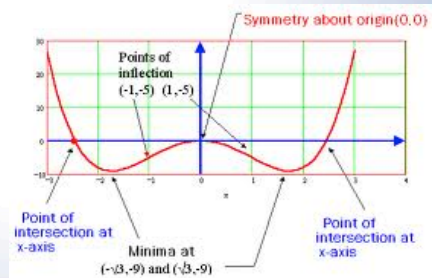
$$\frac{d}{dx} \int_a^x f(t) dt = f(x)$$



$$\lim_{\max \Delta x_i \rightarrow 0} \sum_{i=1}^n f(x_i) \Delta x_i = \int_a^b f(x) dx$$

$$\int_a^b f(x) dx = F(b) - F(a)$$

## Sketching a function



EX 1 Sketch the graph of  $f(x) = x^2(x^2 - 1)$ .

a) domain

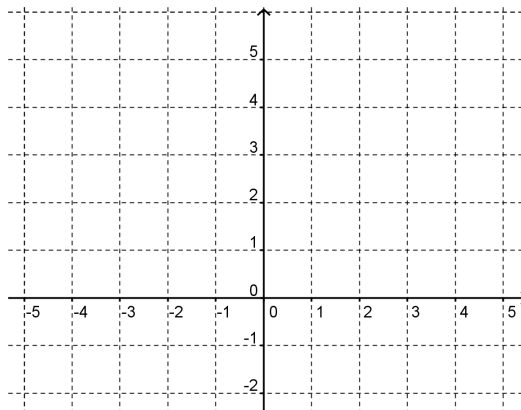
b) symmetry

c) x-intercepts

d) First derivative information

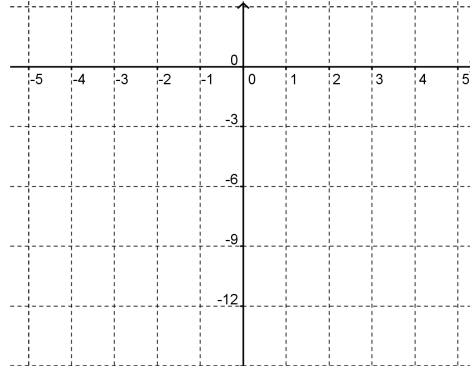
e) Second derivative information

f) Asymptotes:

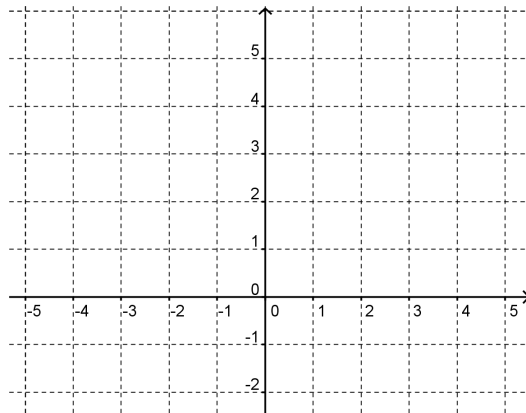


## 19 Curve Sketching

EX 2 Sketch the graph of  $f(x) = \frac{(x-3)^2}{x}$ .



EX 3 Sketch the graph of  $f(x) = |x|^3$ .



# 19 Curve Sketching

