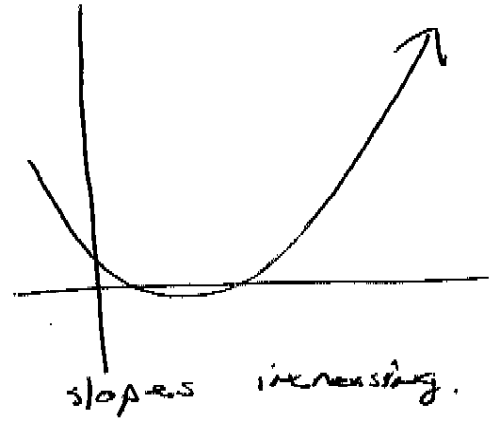


10.2 1/1

Concavity



IF $f'' > 0$, f is concave up.

$f'' < 0$, f is concave down.

Ex 1: Given a graph of f , when
is $f'' > 0$ or $f'' < 0$.

We call critical points where f changes
concavity, points of inflection.

Ex 2: Sketch a) $y = x^3 - x^2$

b) $y = x^4 - 16x^2$

Ex 3: Second derivative test.

Ex 3: sketch. a) $x^5 - 20x^3 = y$, $y' = 15x^2(x+2)(x-2)$

b) $y = x^{1/3}(x-4)$, $y' = \frac{4(x-1)}{3x^{2/3}}$, $y'' = \frac{4(x+2)}{9x^{5/3}}$