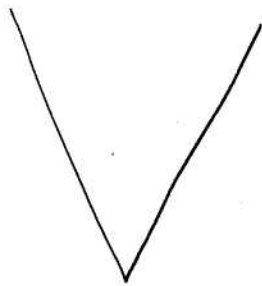


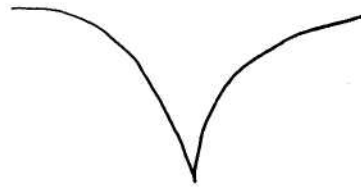
3.2 Differentiability

corner



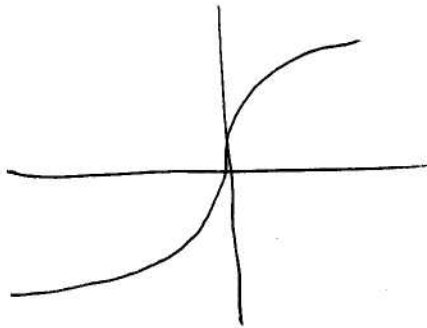
one sided
derivatives differ

cusp

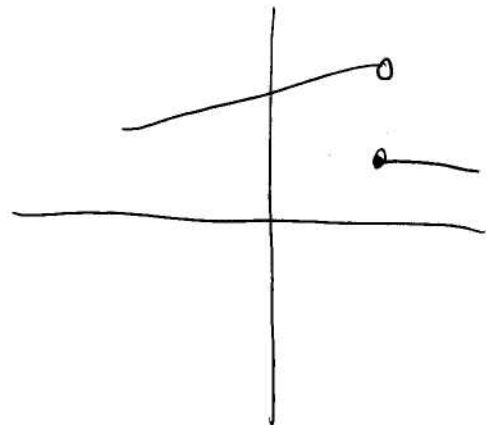


$f' = \infty$ from one side
or
 $f' = -\infty$ from other

Vertical tangent



Discontinuity

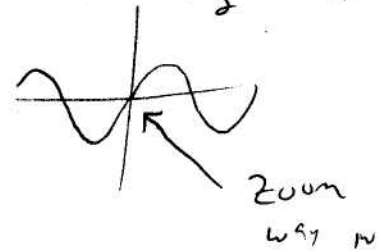


BC 3.2

Pg 2 of 2

Local linearity:

$\sin x$



Difference Quotient

$$\frac{f(a+h) + f(a)}{h}$$

Symmetric Diff. Quotient

$$\frac{f(a+h) - f(a-h)}{2h}$$

Numerical Derivatives

Differentiability Implies Continuity

IUT for derivatives