

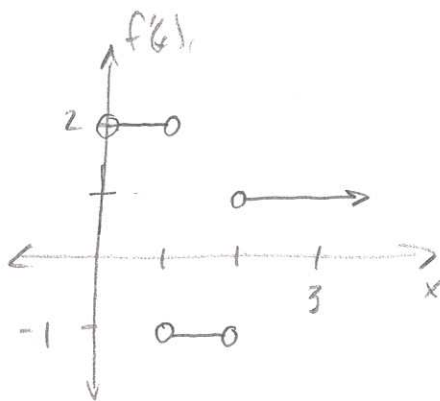
Math 251, Assignment 4

① a)  $x = 1, 2$

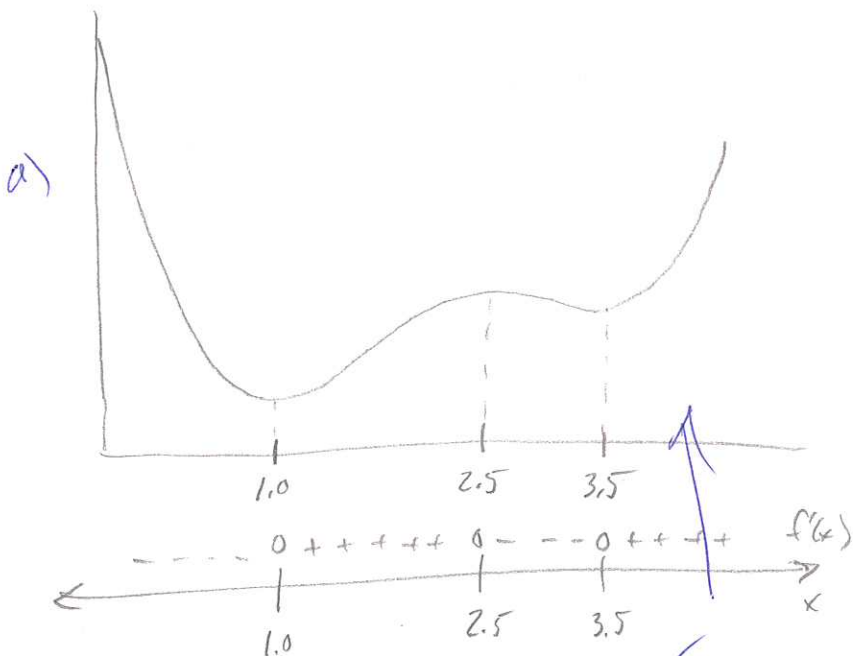
b)  $f'(1) = f'(2) = f'(0.87) = 2,$

$f'(1.1) = f'(1\frac{2}{3}) = -1,$

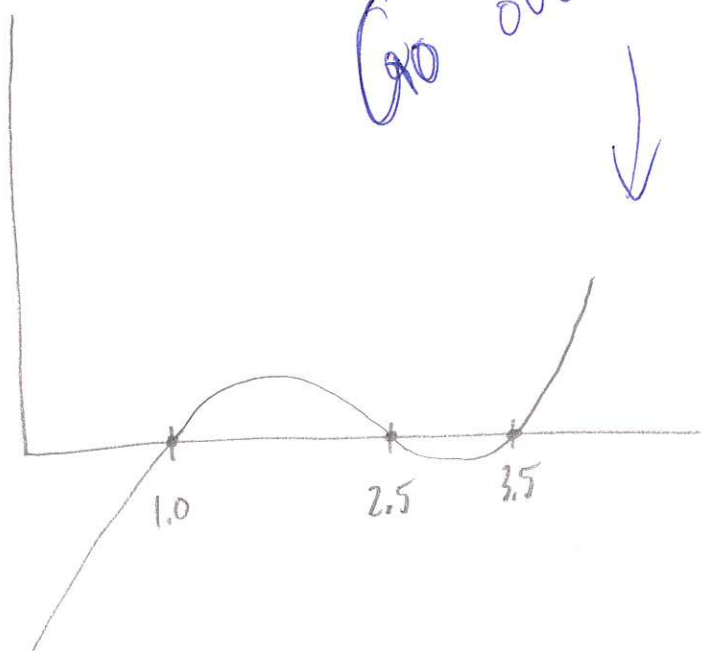
$f'(3) = f'(3\frac{1}{2}) = 1$



②



b)

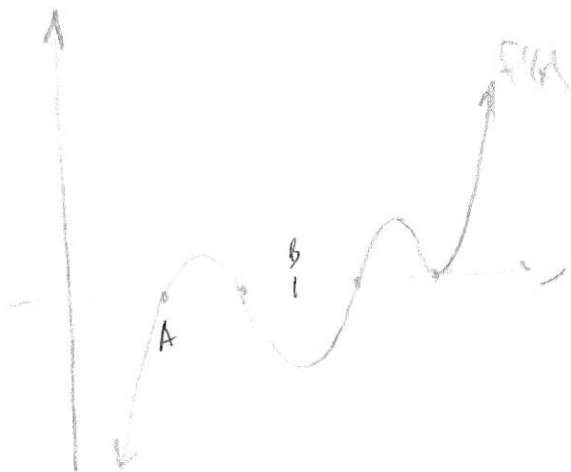
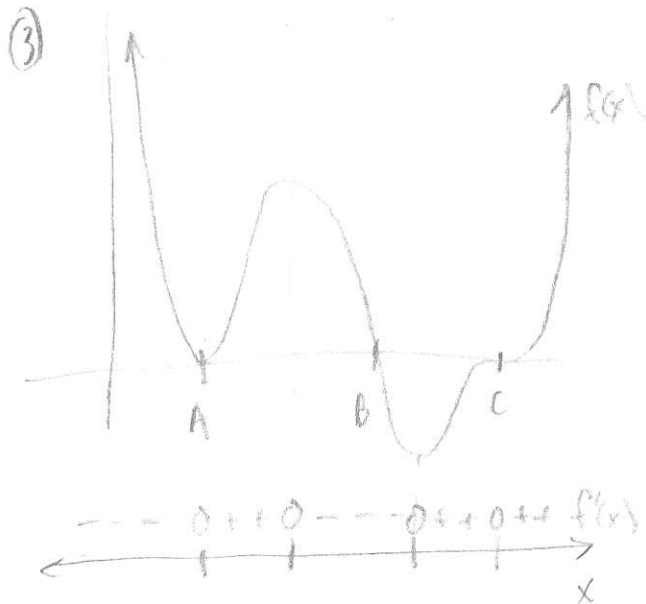


Go over

- c) ~~Rel min of 0.75 at 1.0~~  
 Rel min of 0.9 at 3.5  
 Rel max of 1.25 at 2.5

d) zero

Math 251, Assignment 4



⑤  $y = x^3 + x^2 - x$

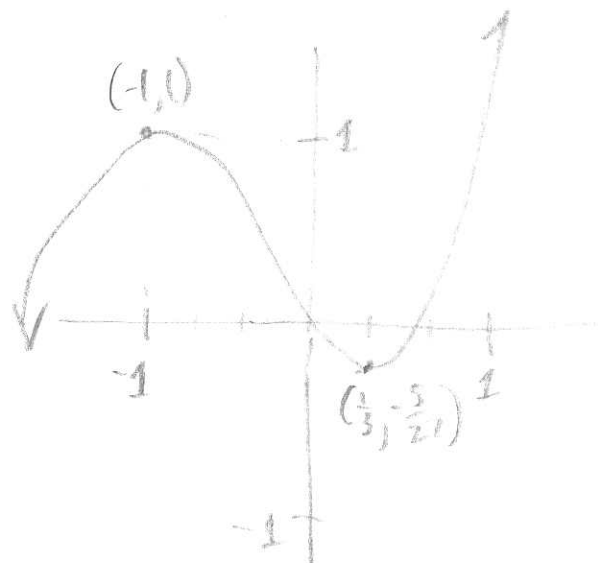
$y' = 3x^2 + 2x - 1 = (3x - 1)(x + 1)$

+++ 0 - - - - 0 + + + + y

x

-1

$\frac{1}{3}$



$x = -1: y = -1 + 1 + 1 = 1$

$x = \frac{1}{3}: y = (\frac{1}{3})^3 + (\frac{1}{3})^2 - \frac{1}{3}$

$= \frac{1}{27} + \frac{1}{9} - \frac{1}{3} = \frac{1}{27} + \frac{3}{27} - \frac{9}{27} = -\frac{5}{27}$