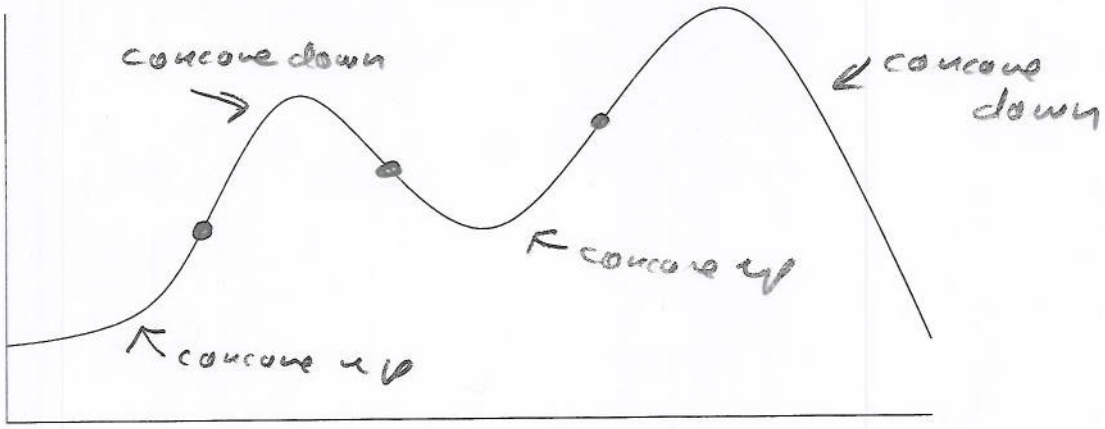
Mathematics 122

Quiz #21 Name: Key

You must show your work to get full credit.

2 pts (1) In the following figure label all the inflection points.



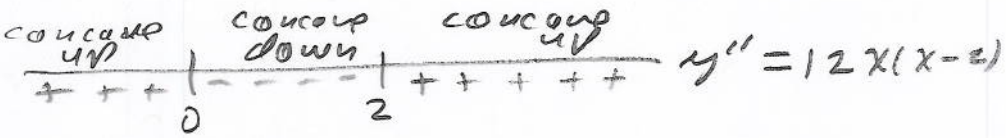
2 pts (2) Find the inflection points of $y = x^4 - 4x^3 + 3x - 9$.

$y' = 4x^3 - 12x^2 + 3$

$y'' = 12x^2 - 24x$

$= 12x(x-2)$

$x = 0$ and $x = 2$



1 pt (3) Find the derivative of $y = \dfrac{4}{e^x + x} - 5e^{x^2+x} + \ln(e^x + x)$

$\dfrac{dy}{dx} =$

$y = 4(e^x + x)^{-1} - 5e^{x^2+x} + \ln(e^x + x)$

$= -4(e^x + x)^{-2} - 5e^{x^2+x}(2x+1) + \dfrac{e^x + 1}{e^x + x}$