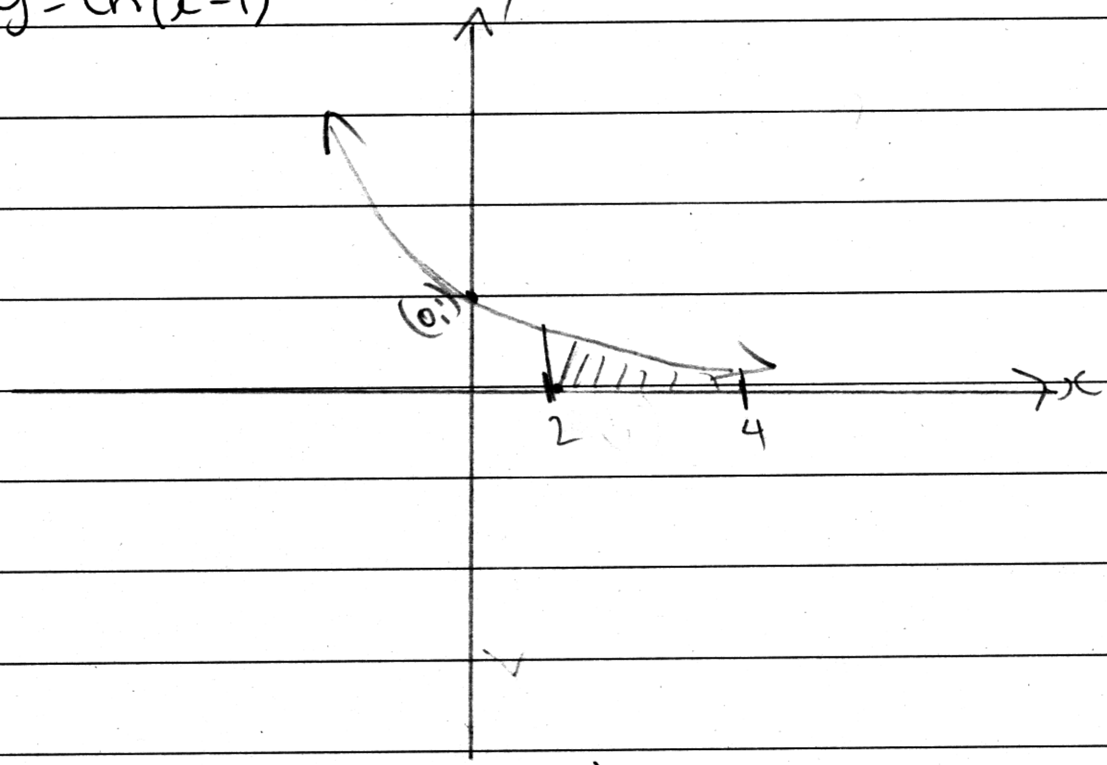
Question 9

a) $y = \ln(x-1)$



ii) $\frac{b-a}{6}\left[f(a) + 4f\left(\frac{a+b}{2}\right) + f(b)\right]$

$\frac{4-2}{6}\left[\cancel{f(a)}^{0} + (2.7) + 1.09\right]$

$\frac{2}{6}(3.892588722)$

$= 1.28$ units^2

b) ~~5000~~ $A_1 = 5000(1.0875)^{20}$

$A_2 = 5000(1.0875)^{19}$

$\downarrow$

$A_{20} = 5000(1.0875)$

$A_1 + A_2 + A_3 - - - + A_{20}$

$S_n = a\left(\frac{r^n - 1}{r-1}\right)$

$= 5000(1.0875)\left(\frac{1.0875^{20} - 1}{0.0875}\right)$

$= \$270498.72$ (nearest cent)

c) $V_2 = 2t^2$

when $t = 5$

$V_2 = 2(5)^2$

$= 50$