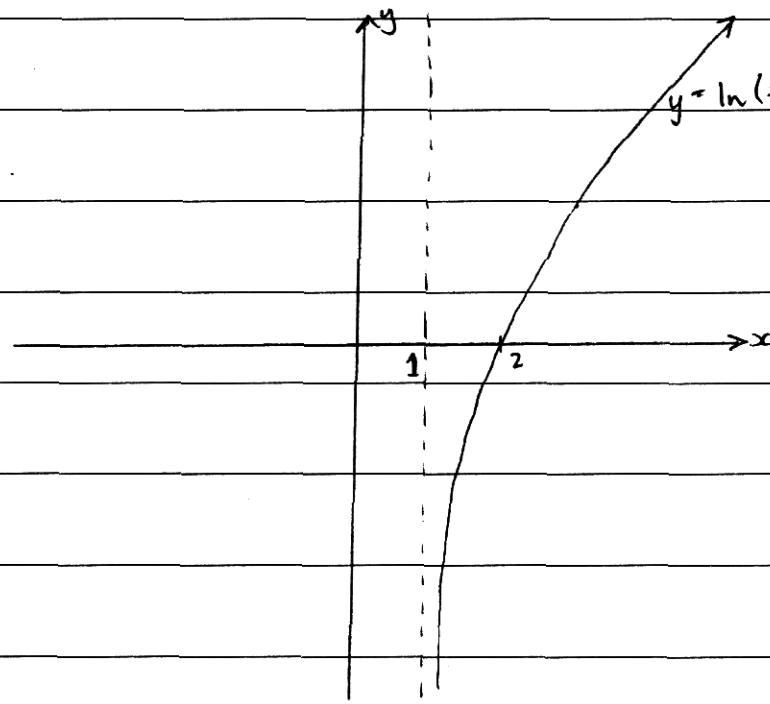
Question 9

BOARD OF STUDIES
NEW SOUTH WALES

Question 9:

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

(i)



(iii) $\int_2^4 \ln(x-1)\,dx$.

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(b) —

(c) (i) $v_1 = 10t$ #

(ii) $v_1 = 10t$ $v_2 = 2t^2$

$\frac{dv_1}{dt} = 10$ $\frac{dv_2}{dt} = 4t$

when $t = 5$

$\frac{dv_1}{dt} = 10$ $\frac{dv_2}{dt} = 4 \times 5 = 20$.

$\int 10t \, dt$ $\int 2t^2$

$x = 5t^2 + C$ $x = \frac{2t^3}{3} + C$.

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