c) Show that $\int \frac{dx}{x(\log x)^{3/5}} = \frac{-5}{3}(\log x)^{-3/5}$

2) Hence determine whether the series

$$\sum_{n=2}^{\infty} \frac{1}{n(\log n)^{3/5}}$$

converges or diverges.

3) use sterling's formula to determine a number λ such that.

$$\frac{(10n)!}{((5n)!)^2} \sim \lambda\left(\frac{2^{10n}}{\sqrt{n}}\right)$$

as $n \to \infty$