

Q6. (a) From the following data calculate Spearman's rank correlation coefficient R [4]
 between X and Y

X: 16 18 25 30 12
 Y: 38 21 38 16 50

(b) Find k if $f(z) = \frac{1}{2} \log(x^2 + y^2) + i \tan^{-1} \left(\frac{kx}{y} \right)$ is analytic. [5]

(c) Use Convolution theorem to find $L^{-1} \left\{ \frac{1}{(s+3)(s-4)^2} \right\}$. [6]