

1) Derive the z-transform for the following:

$$F(z) = \sum_{n=-\infty}^{\infty} a^n u(n) z^{-n} = 1 + a/z + a^2/z^2 + a^3/z^3 + \dots$$

2) Show that the z-transform of  $x(n-k) = z^{-k}x(n)$