

$$x_2(n) = 6^{-n}u(-n)$$

The Z-transform (by Definition)

$$X(z) = \sum_{-\infty}^{\infty} x_2(n)z^{-n}$$

Put in the x_2

$$X(z) = \sum_{-\infty}^{\infty} 6^{-n}u(-n)z^{-n}$$

The effect of $u(-n)$ changed the summation range

$$X(z) = \sum_{-\infty}^0 6^{-n}z^{-n}$$

Group the terms together

$$X(z) = \sum_{-\infty}^0 (6z)^{-n}$$

Interchange the summation range

$$X(z) = \sum_0^{\infty} (6z)^{+n}$$

The summation is finite if the common ratio < 1

$$X(z) = \sum_0^{\infty} (6z)^{+n} < \infty \text{ if } |6z| < 1 \rightarrow |z| < \frac{1}{6}$$