

Applied Digital Control – Tutorial 1 – z-transform

Question 1

If $F(z) = \frac{2z^5 + 7z^4 - 3z^3 + 5z}{z^6 + 3z^5 + 4z^4 + 1}$, then find the first 4 terms of $f(k)$, by using long division method.

Solution: <https://www.youtube.com/watch?v=6ZMJqin22s&t=78s>

Question 2

By using z-transform, solve $y(k+1) - 3y(k) = -6$, given the initial condition $y(0) = 1$.

Solution:

<https://www.youtube.com/watch?v=Nu07uXyko&list=PLV7t6XEhPSabf0XQW8nLRvm0clsfCO480&index=3>

Question 3

Find the z-transform of (a) an impulse, and (b) a unit step.

Solution:

<https://www.youtube.com/watch?v=xpzdRY98CQY&index=4&list=PLV7t6XEhPSabf0XQW8nLRvm0clsfCO480>