PROBLEM:

Let $x[n]$ be the complex exponential:

$$x[n] = 7e^{j(0.1\pi n + 0.25\pi)}$$

If we define a new signal $y[n]$ to be the output of the FIR filter:

$$y[n] = x[n] + x[n-5]$$

it is possible to express $y[n]$ in the form

$$y[n] = Ae^{j(\omega_0 n + \phi)}$$

Determine the numerical values of A, ϕ and ω_0.