PROBLEM:

Let $x[n]$ be the complex exponential

$$x[n] = e^{j(0.4\pi n - 0.5\pi)}$$

If we define a new signal $y[n]$ to be the first difference: $y[n] = x[n] - x[n-1]$, 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. (Should ω_0 be equal to 0.4π?)