$$N = 100; \quad f = 0.255; \quad X(f) = \sum_{t=1}^{N} x(t)e^{-2\pi j f(t-1)}$$

$$x(t) = 1\sin[2\pi f(t-1)] + 1\cos[2\pi f(t-1)]; \quad t = 1, \ldots, N$$

$$f = \frac{k-1}{N}, \quad k = 1, \ldots, N$$