$$N = 200; f = 0.250; X(f) = \sum_{t=1}^{N} x(t) e^{-2\pi j f(t-1)}$$

$$x(t) = 1 \sin[2\pi f(t-1)] + 0 \cos[2\pi f(t-1)]; t = 1, ..., N/2; \ x(t) = 0; t = N/2 + 1, ..., N$$