

PROBLEM:

A linear-FM “chirp” signal is one that sweeps in frequency from $\omega_1 = 2\pi f_1$ to $\omega_2 = 2\pi f_2$ as time goes from $t = 0$ to $t = T_2$.

- (a) Determine the formula for a signal $x(t)$ that sweeps from $f_1 = 5000$ Hz at $T_1 = 0$ secs. to $f_2 = 1000$ Hz at $T_2 = 2$ secs.
- (b) Sketch the time-frequency diagram showing the instantaneous frequency versus time for the signal in part (a).