

1. (2 pts) Plot the signal $x(t) = t[u(t) - u(t - 6)]$.
2. (6 pts) For each of the signals given below, determine whether it is (i) periodic or aperiodic, (ii) even, odd, or neither (iii) bounded or unbounded.
 - (a) $x(t) = e^{-|t|} \cos(2\pi t) \quad \forall t$.
 - (b) $x[n] = \sin((\pi/15)n) \quad \forall n$.
3. (12 pts) For each of the systems given below, determine whether it is (i) memoryless or not, (ii) invertible or non-invertible (iii) causal or non-causal, (iv) BIBO stable or BIBO unstable, (v) time-invariant or time-varying, (vi) linear or non-linear.
 - (a) $y(t) = [\cos(8\pi t + \pi/3)]x(t) \quad \forall t$.
 - (b) $y[n] = 5x[n] + 33.5 \quad \forall n$.