

1. Determine whether the following signals are periodic or not. If periodic, find the period:
 - (a) $x[n] = \exp(i0.25n/\pi)$
 - (b) $x[n] = \exp(i2\pi n/.25)$
 - (c) $x[n] = \sin(3.5\pi n/7)$
 - (d) $x[n] = \exp(i2\pi n/.25) + \cos(\pi n)$
2. 3.4-13 on page 330.
3. Determine whether the following discrete-time systems are linear, time-invariant, memoryless, causal and stable.
 - (a) $y[n] = \frac{x[n]}{x[n+3]}$
 - (b) $y[n] = \sin\left(\frac{\pi}{2}(n+1)\right)x[n]$
 - (c) $y[n] = \sum_{k=-n}^n (x[k+a])^{1.1}$, a is an integer.
4. 3.7-1 on page 331.
5. 3.8-2 on page 331.