

PROBLEM:

For each short question, pick a correct frequency¹ and enter the number in the answer

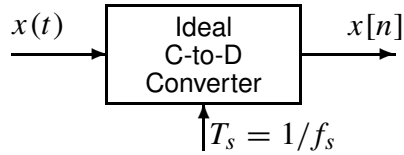
box²:

Question**Frequency**

- (a) If the output from an ideal C/D converter is $x[n] = A \cos(\pi n)$, and the the input signal $x(t)$ defined by: $x(t) = A \cos(5000\pi t)$ then determine one possible value of the sampling frequency of the the C-to-D converter:

1. 8000 Hz
2. 4000 Hz
3. 2000 Hz
4. 1600 Hz
5. 1200 Hz
6. 1000 Hz
7. 800 Hz
8. 500 Hz
9. 400 Hz

ANS =



- (b) A signal $x(t)$ is defined by: $x(t) = \Re\{e^{j4000\pi t} + e^{j3000\pi t}\}$. Its fundamental frequency is:

ANS =

- (c) Determine the Nyquist rate for sampling the signal $x(t)$ defined by: $x(t) = \Re\{e^{j4000\pi t} + e^{j3000\pi t}\}$.

ANS =

¹Some questions have more than one answer, but you only need to pick one correct answer.

²It is possible to use an answer more than once.