Assignment 0

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

1) If \( t(t) \) is square pulse of height 1 and is located between \( t = -1 \) and \( t = +1 \), then \( x(2t - 1) \) is located between
- \( t = 0 \) and \( t = 2 \)
- \( t = 0 \) and \( t = 1/2 \)
- \( t = -1/2 \) and \( t = 0 \)
- \( t = 1 \) and \( t = 2 \)

No, the answer is incorrect.
Score: 0

Accrued Answers:
- \( t = 0 \) and \( t = 1/2 \)

2) For \( n \) even, solutions of the equation \( x^n + 1 = 0 \) are
- \( x = +j \)
- \( x = -j \)
- \( x = e^{\frac{2\pi k + \pi}{n}} \), \( k = 0, 1, \ldots, n - 1 \)
- \( x = e^{\frac{2\pi k - \pi}{n}} \), \( k = 0, 1, \ldots, n - 1 \)

No, the answer is incorrect.
Score: 0

Accrued Answers:
- \( x = e^{\frac{2\pi k + \pi}{n}} \), \( k = 0, 1, \ldots, n - 1 \)

3) \( H(s) \) is an analog filter with two zeros at \( s = a \) and \( s = b \), and three poles at \( s = A, s = B \) and \( s = C \). If \( H(s) \) is causal and stable, then
- \( a, b \) should be on the LHP in s-plane.
- \( a, b \) should be on the RHP in s-plane.
- \( A, B, C \) should be on the LHP in s-plane.
- \( A, B, C \) should be on the RHP in s-plane.

No, the answer is incorrect.
Score: 0

Accrued Answers:
- \( A, B, C \) should be on the LHP in s-plane.

4) If \( \delta(t) \) denotes the Dirac delta function, then convolution between \( \delta(t - 2\tau) \) and \( \delta(t + \tau) \) is
- \( \delta(t - \tau) \)
- \( \delta(t + \tau) \)
- \( \delta(t) \)

No, the answer is incorrect.
Score: 0

Accrued Answers:
- \( \delta(t - \tau) \)

5) Let \( x(t) \) consist of a periodic train of impulses with period \( T \), i.e.,
- \( x(t) = \sum_{n=-\infty}^{\infty} \delta(t - nT) \). If the Fourier series expansion of \( x(t) \) is given by
- \( c_n = 1, \omega_0 = 2\pi/T \)
- \( c_n = 1, \omega_0 = 2\pi/T \)
- \( c_n = 1, \omega_0 = 2\pi/T \)
- \( c_n = 1, \omega_0 = 2\pi/T \)

No, the answer is incorrect.
Score: 0

Accrued Answers:
- \( c_n = 1, \omega_0 = 2\pi/T \)

6) The de function, \( x(t) = 1, -\infty < t < +\infty \) has Fourier transform \( X(j\omega) \) given by
- \( 2\pi \delta(\omega) \)
- \( 1, -\infty < \omega < +\infty \)
- \( \delta(\omega) \)
- Does not exist.

No, the answer is incorrect.
Score: 0

Accrued Answers:
- \( 2\pi \delta(\omega) \)