

PROBLEM:

For each of the following signals, pick one of the representations below that defines *exactly* the same signal. Write your answer ((a), (b), (c), (d) or (e)) in the box next to each signal.

$$\boxed{\text{ANS} =} \quad e^{j2\pi/3} e^{j100\pi t} + e^{-j2\pi/3} e^{-j100\pi t}$$

$$\boxed{\text{ANS} =} \quad 2 \cos(100\pi t + 4\pi/3)$$

$$\boxed{\text{ANS} =} \quad 2 \cos(100\pi t + 2\pi/3)$$

$$\boxed{\text{ANS} =} \quad e^{j\pi/3} e^{j100\pi t} + e^{-j\pi/3} e^{-j100\pi t}$$

$$\boxed{\text{ANS} =} \quad -2 \cos(100\pi t + 2\pi/3)$$

POSSIBLE ANSWERS:

Your answer will be one of the following choices. **Please note that you may not need to use all of the following signals. If that is the case, then one or more of the following signals will be used more than one time to match the above signals.**

(a) $x_a(t) = \cos(100\pi t - \pi/3)$

(b) $x_b(t) = 2 \cos(100\pi t - \pi/3)$

(c) $x_c(t) = \Re \{ 2e^{-j2\pi/3} e^{j100\pi t} \}$

(d) $x_d(t) = 2 \cos(100\pi t + \pi/3)$

(e) $x_e(t) = \Re \{ (-1 + j\sqrt{3}) e^{j100\pi t} \}$