## **Instructions**

- Separate into groups of no more than three students each. The group cannot be the same as any of your former groups after the midterm.
- 2. ENRE (Explanation is not required for this exercise.)
- Do not panic.

Date: <u>0</u> <u>6</u> / <u>1</u> <u>1</u> / 2019			
Name	ID (last 3 digits)		
Prapun	5	5	5

1. A PM signal is created from the message m(t) by  $x_{PM}(t) = 3\cos(2\pi f_c t + k_p m(t))$ . Suppose  $f_c = 1$  and  $k_p = \frac{\pi}{4} = 45^\circ$ . For the message m(t) plotted blow. Plot the corresponding  $x_{PM}(t)$ .

