Alyssa Rubalcava Quiz # 2

1. (a) $z = -2 + 2j$

$c = a + bj$ $\quad \angle c = \arctan \frac{b}{a}$

$\angle c = \arctan \frac{2}{-2}$

$\angle c = -0.785$

(b) $z = -2 - 2j$

$\angle c = \arctan \frac{-2}{-2}$

$\angle c = 0.785$

(c) $z = 2 - 2j$

$\angle c = \arctan \frac{-2}{2}$

$\angle c = -0.785$

2. (a) $v(t) = 4\cos(2\pi(10.0)t + 30°)$

$v(0) = 4\cos(2\pi(10.0)(0) + 30°)$

$= 4\cos(30°)$

$= 3.46$

(b) $v(t) = 2\sin(2\pi(10.0)0 - 60°)$

$v(0) = 2\sin(-60°)$

$= -1.73$

uniform distribution

1. $P(x) = \frac{1}{b-a}$ $\quad a \le x \le b$

$$\mu = \frac{a+b}{2}$$

$$\sigma = \sqrt{\frac{(b-a)^2}{12}}$$

$a = 0 \quad b = 1$

$$P(x) = \frac{1}{1-0}, \quad 0 \le x \le 1$$

$$P(x) = 1 \qquad , 0 \le x \le 1$$

2. statistical mean $= \frac{1+0}{2} = \frac{1}{2}$ $\quad \mu = \frac{1}{2}$

$$\sigma = \sqrt{\frac{(1-0)^2}{12}} = \frac{1}{\sqrt{12}}$$

3. $\sigma = \frac{1}{\sqrt{12}}$