Qua 2

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

$\angle c = a + bj$

$\angle c = \arctan \frac{b}{a}$

$\angle c = \arctan \frac{2}{-2} \times 180/pi$

$\angle c = 45$

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

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

$\angle c = 0.785$

1.(c) $z = 2 - 2j$

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

$\angle c = -0.785$

2. $V(t) = (4\cos(2\pi(10.0)t + 30°)$

$= 3.469181615$

$V(t) = (2\sin(2\pi(10.0)t - 60°)$

$= -1.732050808$

$$F(w) = \int_{-\infty}^{\infty} f(t) e^{-jwt} dt$$

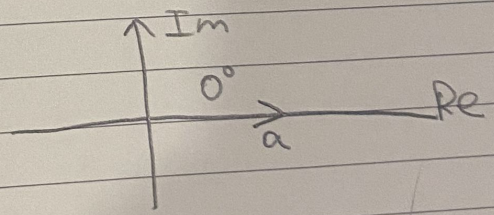
$$f(t/\pi) = \begin{cases} 1, & (0, \pi) \\ 0, & (\pi, 2\pi) \end{cases}$$

$$F(w) = \int_0^{\pi} 1 e^{-jwt} dt$$

$$-\frac{1}{jw}[e^{jwt}]_0^{\pi}$$

$F(w) =$

$|F(w)| \propto \text{sync}(t)$



3) Quiz. 2 Probability and statistics

If X is uniformly distributed over [a,b]
then, $P(x) = \frac{1}{b-a}$, $a \le x \le b$

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

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

Here it is given a random variable that is uniformly distributed over [0,1]

$\therefore a = 0, \quad b = 1$

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

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

$\text{mean} = \frac{1+0}{2} = \frac{1}{2}$

$\mu = \frac{1}{2}$

Statistical standard deviation σ

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

$\therefore$ $\boxed{\sigma = \frac{1}{\sqrt{12}}}$