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CIVIL ENGINEERING  
MAT 101

### ASSIGNMENT ANSWERS

i) An empty set is defined as a set without values.

ii) Singleton set is defined as a set with just one value, it is also called a unit set.

2) Given that:  
 $A = 2 + 7i$   
 $B = 9 - 5i$

$$\ln(A/B) \Rightarrow \ln A - \ln B$$

$$\equiv \ln(2+7i) - \ln(9-5i)$$

$$\equiv \frac{2+7i}{9-5i} \times \frac{9+5i}{9+5i} = \frac{18+73i-35}{106}$$

$$\therefore \ln\left(\frac{-17+73i}{106}\right) //$$

$$\begin{aligned} \text{ii) } e^{(B-A)} &= e^{(9-5i-2-7i)} \\ &= e^{(7-12i)} \\ &= 7e^{-12ei} // \end{aligned}$$