Week 5 Assignment S

1. Sketch the circuit diagram for the following circuits and label the reference for each circuit:

   a. [Diagram]

   b. [Diagram]

2. In the circuit diagram provided, if R = 10 ohms and C = 100 uF, find the time constant in seconds.

   Time constant = R C

   Time constant = 10 ohms * 100 uF

   Time constant = 1000 seconds

3. For the circuit, if the voltage across the capacitor is 10 V, find the current at time t = 1 second.

   Current = (V C / R)

   Current = (10 V / 10 ohms)

   Current = 1 A

4. Sketch the circuit diagram for the following circuits and label the reference for each circuit:

   a. [Diagram]

   b. [Diagram]

5. In the circuit diagram provided, if the output voltage is 5 V, find the input voltage.

   Input voltage = Output voltage / (1 + R1 / R2)

   Input voltage = 5 V / (1 + R1 / R2)

6. In the circuit diagram provided, if the output voltage is 10 V, find the input voltage.

   Input voltage = Output voltage / (1 + R1 / R2)

   Input voltage = 10 V / (1 + R1 / R2)

7. In the circuit diagram provided, if the output voltage is 5 V, find the input voltage.

   Input voltage = Output voltage / (1 + R1 / R2)

   Input voltage = 5 V / (1 + R1 / R2)

8. Sketch the circuit diagram for the following circuits and label the reference for each circuit:

   a. [Diagram]

   b. [Diagram]