Princess Sumaya University for Technology
جامعة الأميرة سمية للتكنولوجيا

King Abdullah II School of Engineering

EE21221
Electric Circuits (1)
Section #3 4

Quiz # 2
Wednesday 17/11/2021

Name: .....

Q.1) Find i_8, i_4, i_{10}, i_2, v_8, v_4, v_{10}, and P_{ix} in the circuit shown in Figure Q.1. [8-Points]

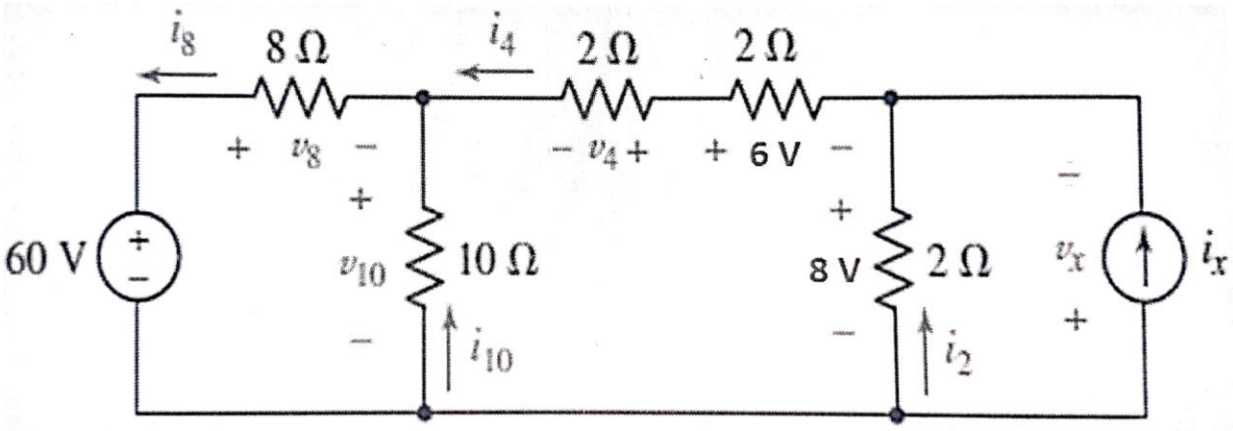


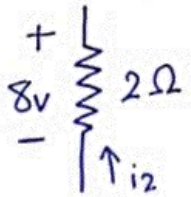
Figure Q.1

Solution:

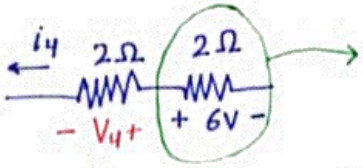
i_8= −5A i_4= −3A i_{10}= −2A i_2= −4A

v_8= 40 V v_4= −6V v_{10}= 20V P_{ix}= −8W

Q1)



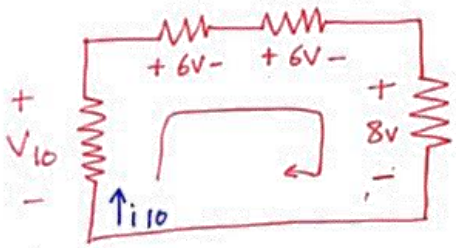
$$i_2 = \frac{-8}{2} = -4A$$



$$i_4 = \frac{-6}{2} = -3A$$

↳ Same current & Same resistance $|V_4| = 6V$

$$V_4 = -6V$$

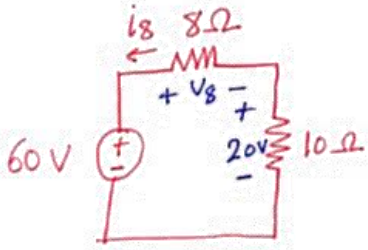


KVL

$$-V_{10} + 6 + 6 + 8 = 0$$

$$V_{10} = 20V$$

$$i_{10} = \frac{-20}{10} = -2A$$



$$-60 + V_8 + 20 = 0$$

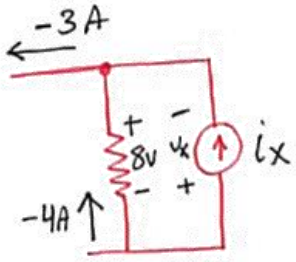
$$V_8 = 40V$$

$$i_8 = \frac{-40}{8} = -5A$$

$$i_x + (-4) - (-3) = 0$$

$$i_x - 1 = 0$$

$$i_x = 1$$



$$V_x = -8V$$

$$P_{ix} = (-8)(1) = \ominus 8W$$

abs

↓ supply

Q.2) In the circuit shown in Figure Q.2, find v_{R2}. [2-Points]

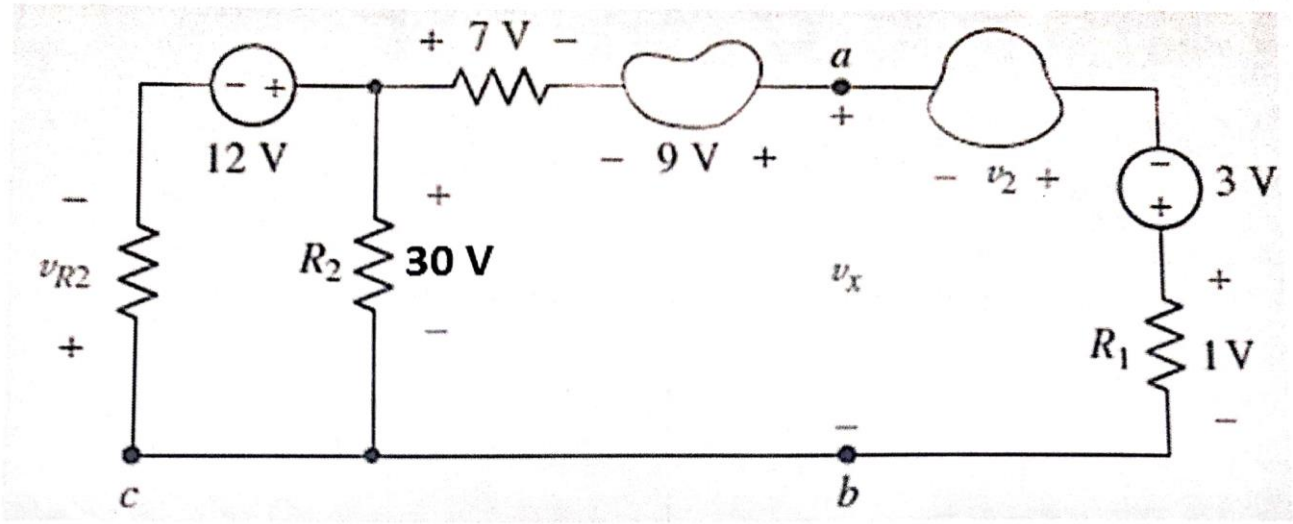


Figure Q.2

Solution:

V_{R2}= $-18V$

KVL

$+ V_{R_2} - 12 + 30 = 0$

$V_{R_2} = -18V$