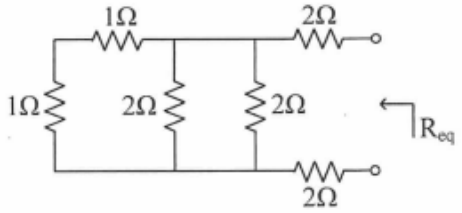
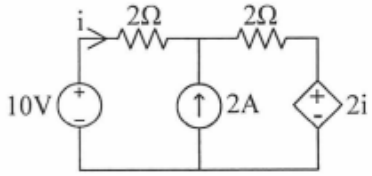
Problem 1

(a) Find the R_{eq} in the following circuit.



R_{eq} = _____

(b) In the following circuit, find i and the power absorbed or delivered by 2i dependent source.



i = _____

P = _____

Absorbed ____ Delivered ____

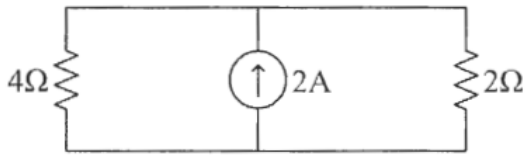
Problem 1 *(25 points)*

(a) *(4 pts)* A complex number Z is given as

(i) $Z = (1+j)^3$ find $|Z|$=_____ $\angle Z$=_____

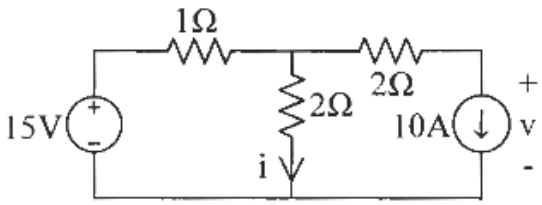
(ii) $Z = (1-j)e^{-j\pi/4}$ find $|Z|$=_____ $\angle Z$=_____

(d) *(5 pts)* In the following circuit, how much power is supplied by 2A source.



P = _____

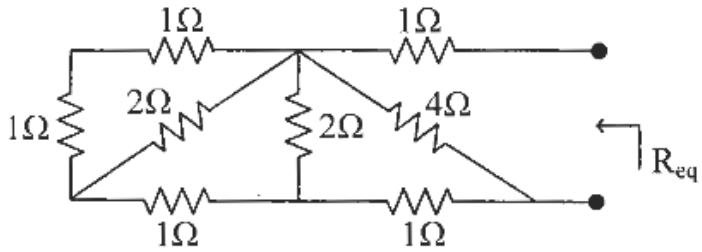
(a) In the following circuit, find v and i.



v = _____

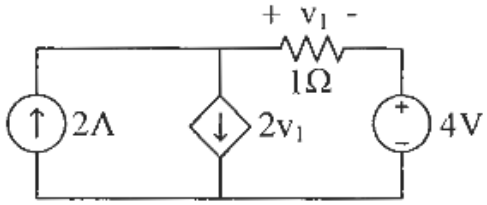
i = _____

(b) Find R_{eq} in the following circuit.



R_{eq} = _____

(c) For the circuit below, find v_1 and the power, absorbed or delivered by 4V source.

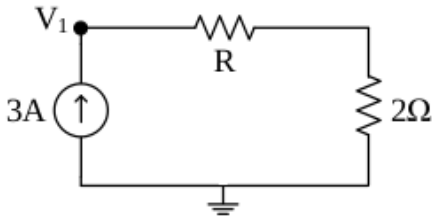


v_1 = _____

P = _____

absorbed ____ ____ delivered ____

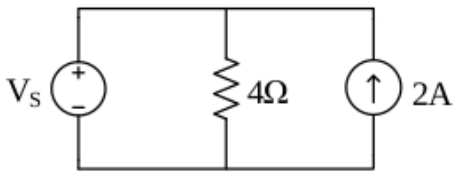
(a) Consider the circuit below. Determine the value of the resistance R and of the node voltage V_1 if the absorbed power by that resistor R is 3W.



R = _____

V_1 = _____

(b) Consider the circuit below. Determine the value of V_S and the absorbed power at the voltage source if the absorbed power at the current source is 6W. (indicate if this power is absorbed or injected)



V_S = _____

P_S = _____

☐ absorbed ☐ injected

(c) Determine the magnitude and phase of the complex number $Z = 2 + j6 + (1 + j)^6$.

$|z|$ = _____

$\angle z$ = _____