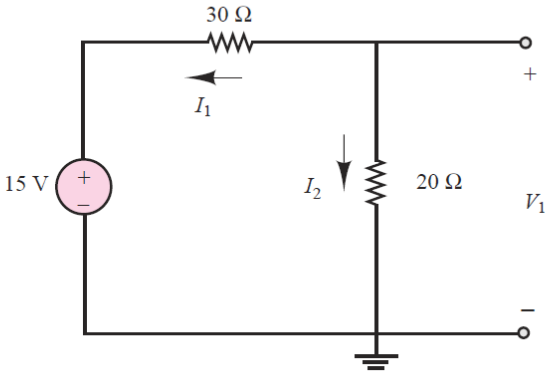
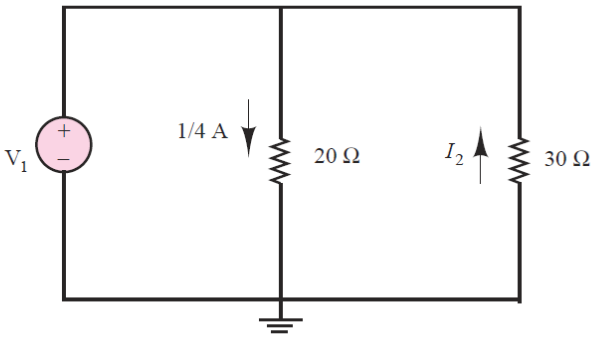
Esercizi parte 1(i circuiti possono essere risolti applicando tutte i concetti visti nella prima settimana)

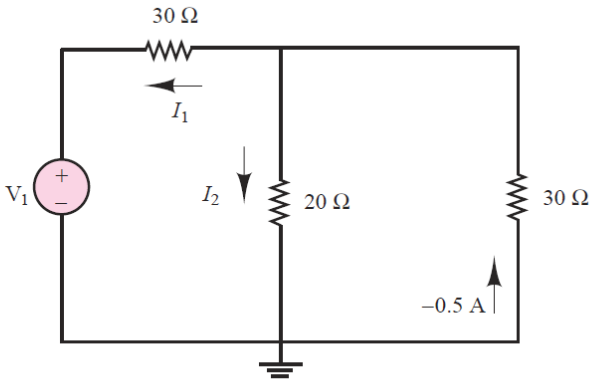
E1) trovare le grandezze incognite dei circuiti in figura,



(a)

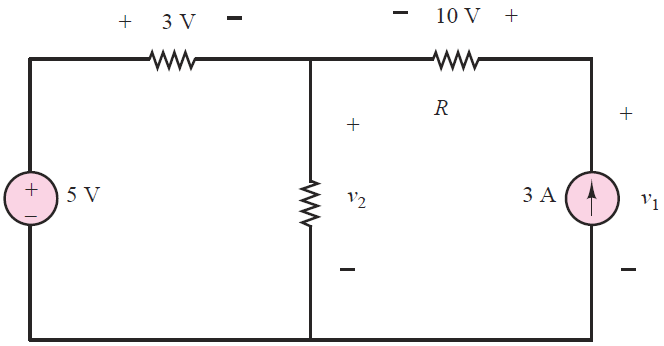


(b)

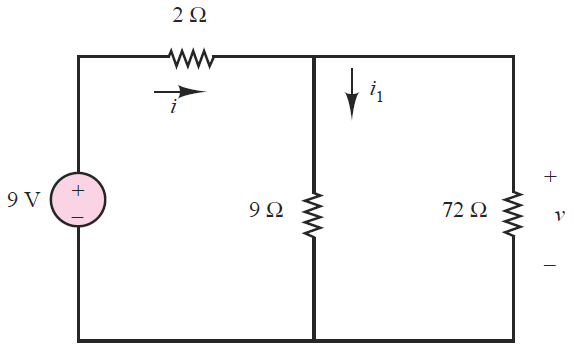


(c)

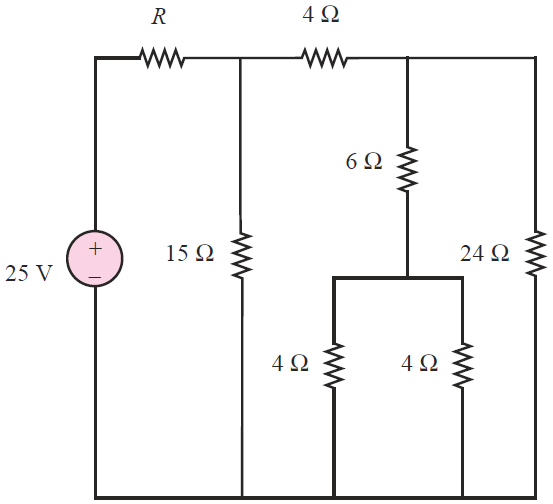
E2) Determinare la potenza assorbita dal resistore R e la potenza generata dal generatore di corrente



E3) Calcolare le grandezze incognite (sugg: applicare serie e parallelo e/o partitori di corrente e di tensione, provare a fare lo stesso esercizio con metodi diversi tra loro)



E4) la potenza assorbita dal resistore da 15 [Ω] vale 15 [W], trovare R (sugg: applicare definizione di potenza e concetti di serie parallelo)



Risposte

E1

a)I_1=-0.3 [A], I_2=0.3 [A], V_1=6 [V]

b) V_1= 5 [V], I_2=-0.167 [A]

c) I_2=0.75 [A], I_1=-1.25 [A] V_1=-52.5 [V]

E2)

V_2=2 [V]

V_1=12 [V]

P_R=10 [V] x3 [A] = 30 [W] (convenzione degli utilizzatori)

$P_{gencorremte}$=12 [V] x3 [A] = 36 [W] (convenzione dei generatori)

E3)

i=0.9 [A]

i_1=0.8[A]

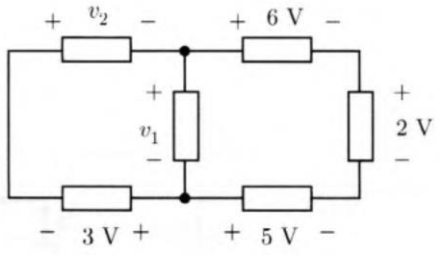
E4)

R=4 [Ω}

E.11 Ricavare le tensioni v_1 e v_2 in Figura E.11.

$[v_1 = 3\ \text{V},\ v_2 = -6\ \text{V}]$

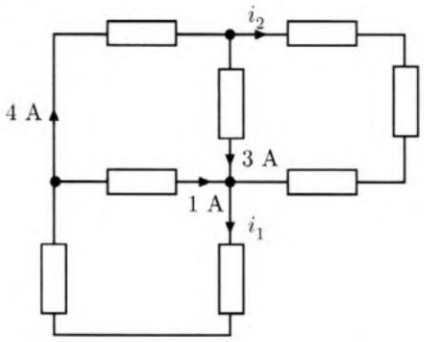
Figura E.11



E.10 Ricavare le correnti i_1 e i_2 in Figura E.10.

$[i_1 = 5\ \text{A},\ i_2 = 1\ \text{A}]$

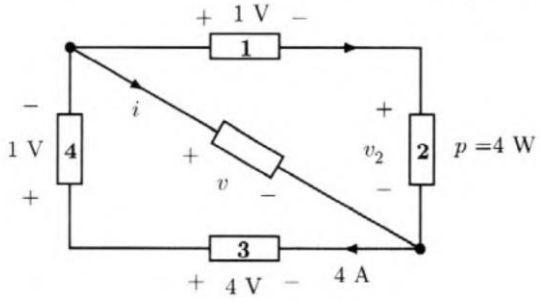
Figura E.10



E.24 Calcolare la tensione v e la corrente i in Figura E.22. Verificare la conservazione della potenza.

$[v = 3\ \text{V},\ \text{i} = 2\ \text{A}]$

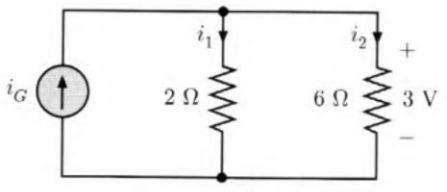
Figura E.22



E.16 Ricavare i_G in Figura E.13.

$[i_G = 2\ \text{A}]$

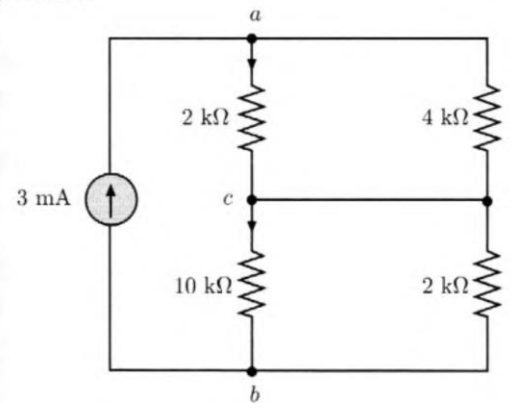
Figura E.13



E.20 In Figura E.17 ricavare le tensioni v_{ac} e v_{cb}.

$[v_{ac} = 4\ \text{V},\ v_{cb} = 5\ \text{V}]$

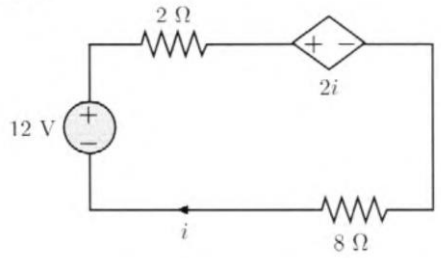
Figura E.17



E.35 Ricavare la corrente i in Figura E.32.

$[i = 1\ \text{A}]$

Figura E.32



E.36 Ricavare la tensione v in Figura E.33.

$[v = -24\ \text{V}]$

Figura E.33