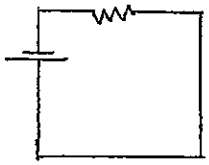
Circuit Worksheet – Series and Parallel Circuits

For each circuit find the total resistance and the current. Assume all resistors are 10 ohm resistors and all batteries have a potential difference of 1.5 Volts.

1)



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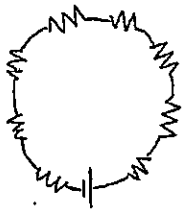

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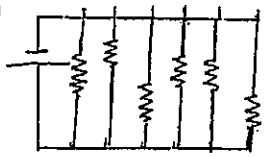

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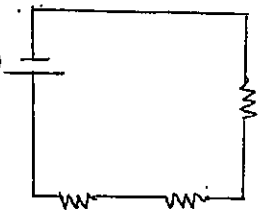

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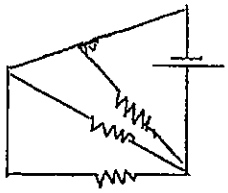

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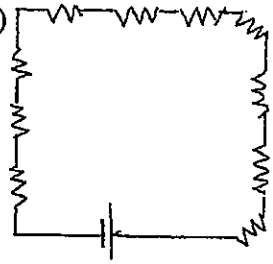

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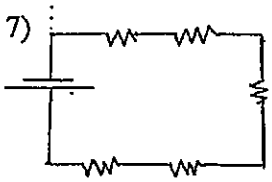

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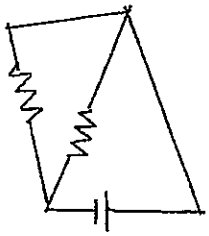

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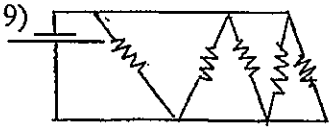

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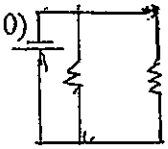

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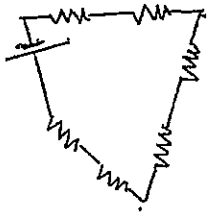

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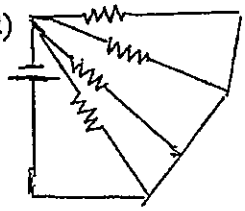

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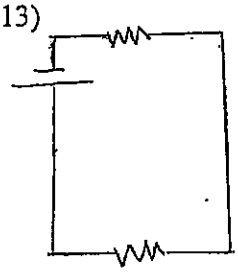

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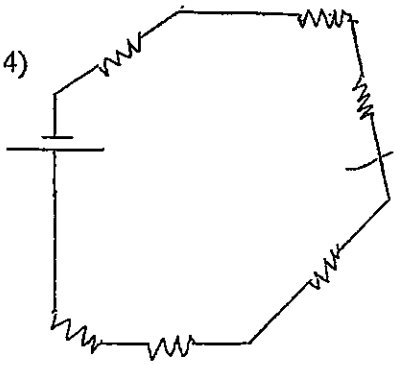

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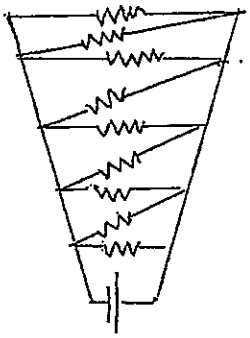
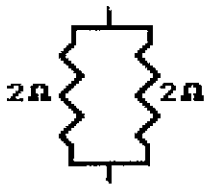
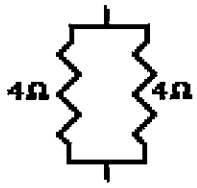


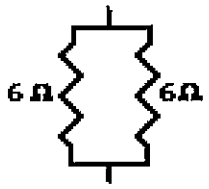
17. For each of the following branched systems, determine the equivalent resistance.

a. 

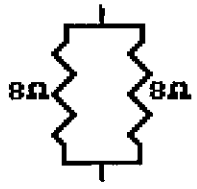
is equivalent to _____ Ω

b. 

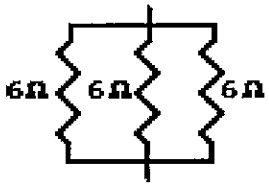
is equivalent to _____ Ω

c. 

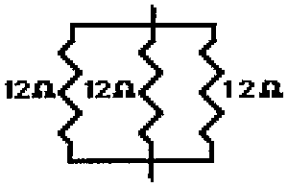
is equivalent to _____ Ω

d. 

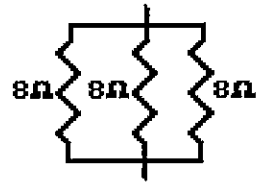
is equivalent to _____ Ω

e. 

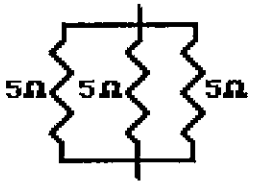
is equivalent to _____ Ω

f. 

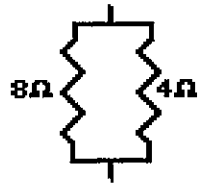
is equivalent to _____ Ω

g. 

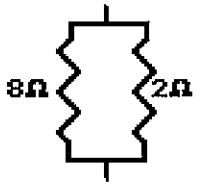
is equivalent to _____ Ω

h. 

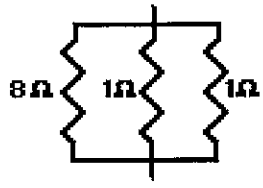
is equivalent to _____ Ω

i. 

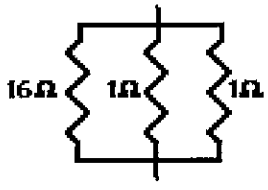
is equivalent to _____ Ω

j. 

is equivalent to _____ Ω

k. 

is equivalent to _____ Ω

l. 

is equivalent to _____ Ω

18. Four resistors are connected in a parallel circuit. Three of the resistance values are known - 3 Ω, 4 Ω and 6 Ω. The overall or equivalent resistance of the four resistors must be ____ Ω. (Choose the one answer that is most informative.)

a. greater than 3 b. greater than 6 c. greater than 13
d. less than 13 e. less than 3 f. ... it is impossible to tell.