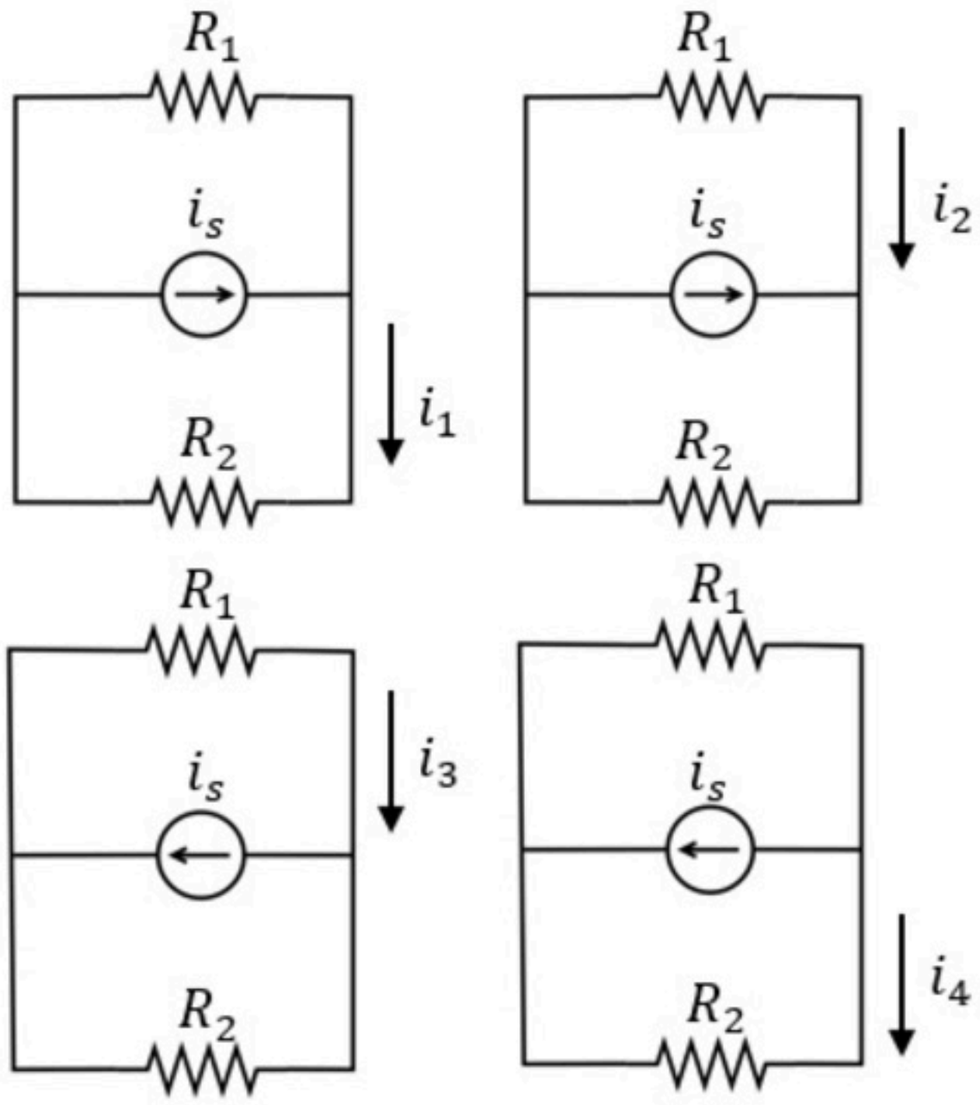
Basic analysis 006

Problem has been graded.

Determine the currents i_1, i_2, i_3 and i_4



Given Variables:

R1 : 25 ohm

R2 : 50 ohm

is : 21 A

Calculate the following:

i1 (A) :

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i2 (A) :

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i3 (A) :

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i4 (A) :

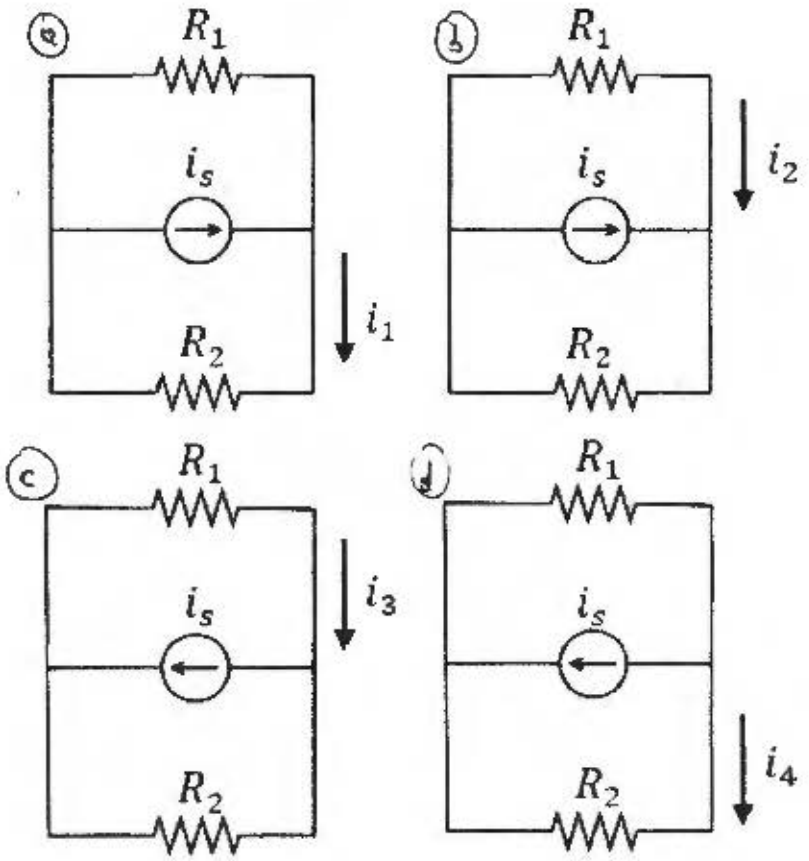
Hint: Use current divider

Determine the currents i_1, i_2, i_3 and i_4

R1 = 30 Ω

R2 = 10 Ω

is = 18 A



(a) CURRENT DIVIDER: $i_1 = i_s \cdot \frac{R_1}{R_1+R_2} = 18\ \frac{30}{40} = 13.5\ A$

$i_1 = 13.5\ A$

(b) $-i_2 = i_s \cdot \frac{R_2}{R_1+R_2} = 18\ \frac{10}{40} = 4.5\ A \Rightarrow$ $i_2 = -4.5\ A$

(c) $i_3 = i_s\ \frac{R_2}{R_1+R_2} = 18\ \frac{10}{40}$

$i_3 = 4.5\ A$

(d) $-i_4 = i_s \cdot \frac{R_1}{R_1+R_2} = 18\ \frac{30}{40}$

$i_4 = -13.5\ A$