$I_1 + I_2 = I_3$

$\frac{V_{R_1}}{R_1} + \frac{V_{R3}}{R_3} \quad \frac{V_{R2}}{R_2}$

I_2 is Current trough R_3, and I_3 is Current through R_2 and refrence node

Also note that voltage V_{R2} is of special interest, Since it is assicioated with the refrence node, V_{R2} is the voltage drop of R_2 caused by I_3

Since we know V_{S1}, we can state that

$V_{R_1} + V_{R_2} = 15V$ or $V_{R_1} = 15 - V_{R2}$

For loop V_{S2}, we can state

$V_{R3} + V_{R2} = 12V$ or $V_{R3} = 12 - V_{R2}$

Then using our V/R current statements

$$\frac{15 - V_{R2}}{10} + \frac{12 - V_{R2}}{1} = \frac{V_{R2}}{5}$$

multiplit each term by 10 to remove the denominators

$$\left(\frac{15 - V_{R2}}{10}\right)\frac{10}{1} + \frac{10}{1}\left(\frac{12 - V_{R2}}{1}\right) = \frac{10}{1} \times \frac{V_{R2}}{5}$$

$$15 - V_{R2} + 10(12 - V_{R2}) = 2V_{R2}$$

simplify

$$15 - V_{R2} + 120 - 10V_{R2} = 2V_{R2}$$

$$135 = 13V_{R2}$$

$$V_{R2} = \frac{135}{13} = 10.38V$$

Therefore

$$I_{R_2} = \frac{10.38}{5} = 2.076\ A$$

we can then infer the rest

$$V_{R_3} = 12 - 10.38 = 1.62\ V$$

$$I_{R_3} = \frac{1.62}{1} = 1.62\ A$$

$$V_{R_1} = 15 - 10.38 = 4.62\ V$$

$$I_{R_1} = \frac{4.62}{10} = 0.462\ A$$

Plugging back in to check

$$V_{R1} + V_{R2} = V_{S1}$$

$$4.62 + 10.38 = 15\ V$$ ✓

$$V_{R2} + V_{R3} = V_{S2}$$

$$10.38 + 1.62 = 12\ V$$ ✓