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$$y = \frac{1}{2}\ln\left(e^{\cos 4x} + 1\right)$$

(b) Evaluate the following integrals

1) $\int \frac{\ln(\tan x)}{\cos x \sin x}\,dx$

2) $\int \frac{1+\ln x}{(x\ln(x))^2}\,dx$

(c) Find the general solution of the equation by using the integrating factor method:

$$x^2\frac{dy}{dx} - y = \frac{x^2}{(1-e^x)e^{\frac{1}{x}}}$$

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(a) Consider the following circuit. Given $v_2 = \frac{1}{3}v_s$, $i_3 = \frac{1}{5}i_1$, and $v_4 = \frac{3}{8}v_2$, determine the values of R_1, R_2 , and R_4 .

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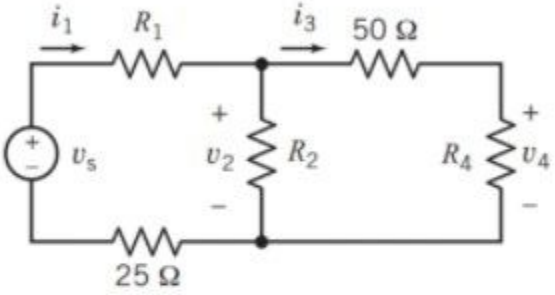

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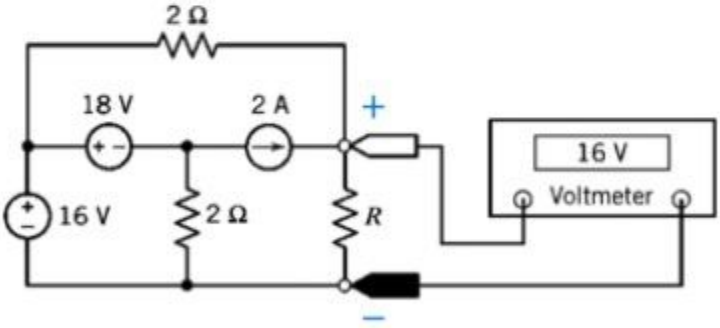

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