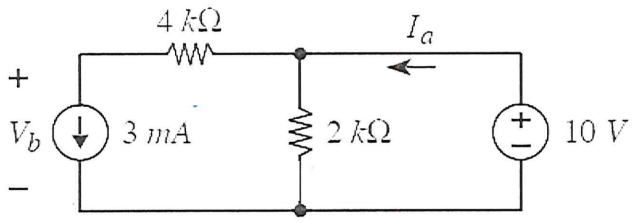
SA1 [5 Marks]. Consider the following circuit:



(a) [2 Marks] Determine the current I_a, flowing through the voltage source.

(b) [2 Marks] Determine the voltage V_b, across the current source.

(c) [1 Marks] How much power is absorbed by the current source?

SA [5 marks] Find the general solution of the differential equation

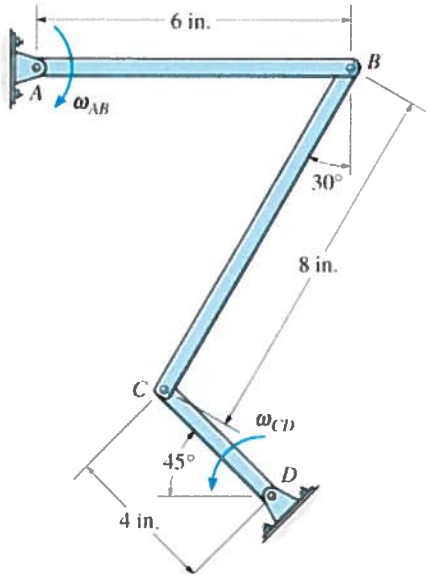
$$ty' + y^2 + 1 = 0\,, \quad t > 0\,.$$

SOLUTION: Separate the variables and solve:

Name:_____ Section:_____

Prob 1 [25 Marks]

A. [20 Marks] Use Chasles' Theorem to find the angular velocity of bar CD at the instant shown given that $\boldsymbol{\omega}_{AB}$= -5 rad/s **k**



Name:_____ Section:_____

B. [5 Marks] For the figure shown, using a straight edge, draw a vector diagram that shows how the velocity of point C, $\mathbf{v}_C$, relates to the velocity of point B, $\mathbf{v}_B$ and the relative velocity of point C with respect to B, $\mathbf{v}_{C/B}$.