

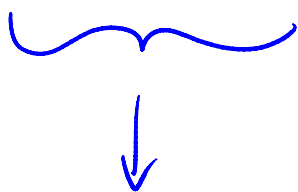
Section 31.3: cont'd

Monday, April 08, 2013
1:33 PM

solve the following DE:

$$RdR + (R^2 + T^2 + T)dT = 0$$

$$RdR + TdT + (R^2 + T^2)dT = 0$$



$$\left[\begin{array}{l} \text{let } u = R^2 + T^2 \\ du = 2RdR + 2TdT \\ = 2(RdR + TdT) \end{array} \right.$$

$$\frac{du}{2} + udT = 0$$

$$\int \frac{du}{2u} + \int dT = \int 0$$

$$\frac{1}{2} \ln u + T = C$$

$$\frac{1}{2} \ln (R^2 + T^2) + T = C$$



perfectly
acceptable
answer

$$\ln \sqrt{R^2 + T^2} + T = C$$

