BEYOND EXCELLENCE –50

JANAKA RODRIGO

Where the extreme challenges excellence.

\# Show that

$$\int_0^{\pi/2} \ln(Sinx)dx = \int_0^{\pi/2} \ln(Cosx)dx = \frac{1}{2}\int_0^{\pi/2} \ln(Sin2x)dx - \frac{\pi}{4}\ln 2 \text{ and}$$

$$\int_0^{\pi/2} \ln(Sin2x)dx = \frac{1}{2}\int_0^{\pi} \ln(Sinx)dx = \int_0^{\pi/2} \ln(Sinx)dx$$

Hence deduce that $\int_0^{\pi/2} \ln(Sinx)dx = \frac{\pi}{2}\ln \frac{1}{2}$

\# $\int_0^{\pi/2} \ln(Sinx)dx = \int_0^{\pi/2} \ln(Cosx)dx = \frac{1}{2}\int_0^{\pi/2} \ln(Sin2x)dx - \frac{\pi}{4}\ln 2$ බවත්

$\int_0^{\pi/2} \ln(Sin2x)dx = \frac{1}{2}\int_0^{\pi} \ln(Sinx)dx = \int_0^{\pi/2} \ln(Sinx)dx$ බවත් පෙන්වන්න.

එනයින් $\int_0^{\pi/2} \ln(Sinx)dx = \frac{\pi}{2}\ln \frac{1}{2}$ බව පෙන්වන්න.