

# Complex Variables Assignment Section 68

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Show that

$$\int \frac{\sin t}{17 + 8 \cos 2t} dt = -\frac{1}{12} \tan^{-1} \left( \frac{4}{3} \cos t \right) + C$$

and

$$\int \frac{\cos t}{17 + 8 \cos 2t} dt = \frac{1}{40} \ln |5 + 4 \sin t| - \frac{1}{40} \ln |5 - 4 \sin t| + C$$

## 1 Compute the integrals