AP CALCULUS AB Dr. Paul L. Bailey

Responses 03/23 Sunday, March 22, 2020

Question 1. On page 481, under the section The Integral (1/u)du, is it necessary to change du to d(-u) when u is negative?

Proof. No; notice that when u is negative, the slope of a line tangent to the graph of $\ln |u|$ is also negative, and as is $\frac{1}{u}$. Indeed, for u < 0, we we still have $\frac{d}{du} \ln |u| = \frac{1}{u}$. This is why the book points out that $\int \frac{1}{u} du = \ln |u| + C$.