

I. Evaluate the following integrals.

1. $\int_1^5 x\sqrt{18-x} \, dx$

2. $\int \cos(x) \sin(x) e^{\sin(x)} \, dx$

(Hint: Be clever with parts or substitute $u = \sin(x)$)

3. $\int \frac{e^x}{1+e^x} \, dx$

4. $\int e^x \cos(x) \, dx$

5. $\int \tan(x) \, dx$ (Hint: $\tan(x) = \frac{\sin(x)}{\cos(x)}$)

6. $\int \sin(x)^2 \, dx$ (Hint: Think parts)

II. Evaluate $\int \sin(x) \cos(x) \, dx$ by substituting $u = \sin(x)$.

Repeat with $u = \cos(x)$.

How can you get different answers?