

Evaluate the following integrals.

1. $\int_1^{e^3} \frac{\ln(x)}{x} dx$

2. $\int_1^{e^3} \frac{\ln(x)}{x^2} dx$

3. $\int e^x \sin(x) dx$

4. $\int \sec(x) dx$

5. $\int x\sqrt{3-2x} dx$

6. $\int x^3 \sin(x^2) dx$

7. $\int \frac{\arcsin(x)}{\sqrt{1-x^2}} dx$

8. $\int \arctan(x) dx$

Hint: Consider multiplying by 1

in the form $\frac{\sec(x) + \tan(x)}{\sec(x) + \tan(x)}$