

Math 2300
Spring 2026
Quiz 1

Name: _____

1. (2 points) Evaluate $\int_0^{\pi/2} \sin x \sqrt{1 - \cos x} \, dx$.

(a) $-\frac{2}{3}$

(b) $\frac{1}{3}$

(c) $\frac{2}{3}$

(d) 1

(e) $\frac{4}{3}$

2. (2 points) Suppose that $\int_1^9 f(x) \, dx = 12$. Compute $\int_0^{2\sqrt{2}} 4x f(x^2 + 1) \, dx$.

(a) 3

(b) 6

(c) 12

(d) 24

(e) 48

3. (2 points) Compute $\int_1^2 x^3 \ln x \, dx$. You may use the fact that $\int_1^2 x^3 \, dx = \frac{15}{4}$.

(a) $4 \ln 2 - \frac{15}{16}$

(b) $4 \ln 2 - 1$

(c) $16 \ln 2 - \frac{15}{4}$

(d) $2 \ln 2 - \frac{7}{16}$

(e) $4 \ln 2 + \frac{15}{16}$

4. (4 points) Compute the following indefinite integral.

$$\int e^{2x} \sin x \, dx$$