

MATH 102 QUIZ 3

1–3. Compute the following integrals.

1. $\int \sin^2 x \cos^2 2x \, dx$.

2. $\int \frac{1}{(4x^2+4x+5)^2} \, dx$.

3. $\int \frac{2}{(x+1)(\sqrt{x+1})} \, dx$. (Hint. Substitute $u = \sqrt{x}$.)

4. Determine whether

$$\int_1^e \frac{1}{x \ln x} \, dx$$

is convergent or divergent. Evaluate it in case it converges.