

Math 122
Quiz 2 Review

1. $\int x^2 \ln x \, dx$

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

3. $\int x^2 e^{2x} \, dx$

4. $\int x e^{x^2} \, dx$

5. $\int x e^{2x} \, dx$

6. $\int \cos^3 2x \, dx$

7. $\int \cos^2 3x \sin^2 3x \, dx$

8. $\int \sin^5 x \cos^2 x \, dx$

9. $\int \sec^3 x \tan^3 x \, dx$

10. $\int \sec^4 x \tan^2 x \, dx$

11. $\int \sqrt{\tan x} \sec^4 x \, dx$

12. $\int \sqrt{\sec x} \tan^3 x \, dx$

Answers

1. $\frac{1}{3}x^3 \left[\ln |x| - \frac{1}{3} \right] + C$
2. $x^2 \sin x + 2x \cos x - 2 \sin x + C$
3. $\frac{x^2}{2}e^{2x} - \frac{x}{2}e^{2x} + \frac{1}{4}e^{2x} + C$
4. $\frac{1}{2}e^{x^2} + C$
5. $\frac{xe^{2x}}{2} - \frac{e^{2x}}{4} + C$
6. $\frac{1}{2} \left[\sin 2x - \frac{\sin^3 2x}{3} \right] + C$
7. $\frac{x}{8} - \frac{1}{96} \sin 12x + C$
8. $-\frac{\cos^3 x}{3} + \frac{2 \cos^5 x}{5} - \frac{\cos^7 x}{7} + C$
9. $\frac{\sec^5 x}{5} - \frac{\sec^3 x}{3} + C$
10. $\frac{\tan^5 x}{5} + \frac{\tan^3 x}{3} + C$
11. $\frac{2}{7} \tan^{7/2} x + \frac{2}{3} \tan^{3/2} x + C$
12. $\frac{2}{5} \sec^{5/2} x - 2 \sec^{1/2} x + C$