

MATH 145
SAMPLE QUIZ 5 — ANSWERS

1. $\int x \cos x \, dx = x \sin x + \cos x + C$
2. $\int x e^{4x} \, dx = \frac{1}{4} x e^{4x} - \frac{1}{16} e^{4x} + C$
3. $\int \frac{1}{x^2 - 4x} \, dx = \frac{1}{4} (\ln |x - 4| - \ln |x|) + C$
4. $\int \frac{2x + 3}{x^2 + 3x + 7} \, dx = \ln |x^2 + 3x + 7| + C$
5. $\int e^{2x} \sin(5x) \, dx = \frac{1}{29} e^{2x} (2 \sin(5x) - 5 \cos(5x)) + C$
6. $\int \frac{1}{x^2 + 2x} \, dx = \frac{1}{2} \ln |x| - \frac{1}{2} \ln |x + 2| + C$
7. $\int \frac{x^2 + 2x}{x^3 + 3x^2 + 4} \, dx = \frac{1}{3} \ln |x^3 + 3x^2 + 4| + C$
8. $\int x^2 \sin x \, dx = -x^2 \cos x + 2x \sin x + 2 \cos x + C$
9. $\int \frac{x + 15}{5x - x^2} \, dx = 3 \ln |x| - 4 \ln |5 - x| + C$
10. $\int \frac{2 + x}{1 - x^2} \, dx = \frac{1}{2} \ln |1 + x| - \frac{3}{2} \ln |1 - x| + C$