

Parts:

1.  $\int (x^2 + 1)e^{2x} dx$

2.  $\int x \ln x dx$

3.  $\int \tan^{-1} x dx$

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

Trig:

5.  $\int \sin^2 \theta \cos^3 \theta d\theta$

6.  $\int \tan \theta \sec^2 \theta d\theta$

7.  $\int \sin^2 \theta d\theta$

8.  $\int \cot^2 \theta \csc^2 \theta d\theta$

Trig Sub:

9.  $\int \sqrt{1 - x^2} dx$

10.  $\int \frac{dx}{(1 + x^2)^2}$

11.  $\int \frac{dx}{\sqrt{x^2 - 1}}$

12.  $\int \frac{e^x dx}{\sqrt{1 - e^{2x}}}$

Partial Fractions:

13.  $\int \frac{(x + 4)dx}{x^2 - 4x - 45}$

14.  $\int \frac{(x + 3)dx}{x^3 + x}$

15.  $\int \frac{(x^2 + 2x + 5)dx}{x^4 - 2x^3 + x^2}$

16.  $\int \frac{x^2 - x - 2}{x^3 - x^2 + x - 1} dx$