

## Integration Problems

29 March 2010

On April 8th, we will have a 30 minute quiz on integration. This quiz will consist of 5 integrals like those in the following list.

1.  $\int x^2 e^x dx$

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

3.  $\int_1^2 \ln x dx$

4.  $\int_1^{e^2} x^2 \ln x dx$

5.  $x^3 \sin x dx$

6.  $\cos x \ln(\sin x) dx$

7.  $\ln^4 x dx$

8.  $\int x^4(x^5 + 6)^9 dx$

9.  $\int \frac{x}{\sqrt{x+1}} dx$

10.  $\int_0^3 \frac{dx}{(x+3)^3}$

11.  $\int_0^{\pi/2} \sin^4 x \cos x dx$

12.  $\int \frac{x}{\sqrt{4-9x^2}} dx$

13.  $\int_0^3 \frac{v^2 + 1}{\sqrt{v^3 + 3v + 4}} dv$

14.  $\int (x^{3/2} + 8)^5 \sqrt{x} dx$

15.  $\int x \sqrt[3]{2x+1} dx$

16.  $\int_{\sqrt{2}}^{\sqrt{3}} (x-1)(x^2-2x)^{11} dx$