

Problem Sheet 1

(1/20/06)

Evaluate the following indefinite integrals by fitting integrands to basic rules:

1. $\int x \left(1 + \frac{1}{x}\right)^3 dx.$

2. $\int \frac{2x}{x-4} dx.$

3. $\int \frac{1}{(x-1)\sqrt{4x^2-8x+3}} dx.$

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

5. $\int_1^e \frac{1-\ln x}{x} dx.$

6. $\int \frac{5}{3e^x-2} dx.$