

MATH 253
Handout # 3

1. Evaluate $\int_1^e x(\ln x)^2 dx$.
2. Find the domain and evaluate $\int \frac{1}{2 + \sqrt[3]{x}} dx$.
3. Evaluate $\int \frac{x}{\sqrt{7 + 6x - x^2}} dx$.
4. Find without Table $\int_0^{\frac{1}{2}} \arctan 2x dx$.
5. Evaluate $\int_0^{\frac{1}{2}} \frac{2x + 1}{4x^2 + 1} dx$.
6. Find without Table $\int e^{3x} \sin \frac{x}{3} dx$.
7. In the domain find the general antiderivative of $\frac{\sqrt{x}}{2 + \sqrt{x}}$.
8. Find $\int \frac{1}{2 + \sqrt{x+1}} dx$ in the domain of definition.
9. Evaluate $\int_{-1}^0 x^2 e^{-3x} dx$.
10. Evaluate $\int_0^2 x\sqrt{4x - x^2} dx$.
11. For $x > 0$ find without Table $\int (3x + 2) \ln x dx$.