

INTRODUCTION TO CALCULUS

MATH 1A

UNIT 18: WORKSHEET

Fundamental Theorem

Find the following integrals using the fundamental theorem of calculus.

1: $\int_1^3 x^3 + x^{-5} dx$

2: $\int_{-2}^1 1 - x^5 dx$

3: $\int_0^1 \frac{1}{x^2+1} dx$

4: $\int_2^4 \frac{1}{x+1} dx$

Now a bit harder ones:

5: $\int_1^4 x^{1/3} dx$

6: $\int_0^1 \sqrt{1+x} dx$

7: $\int_1^2 \frac{1}{\sqrt{x}} + \frac{5}{x^2} dx$

8: $\int_0^1 \frac{2x}{(1+x^2)} dx$