

## Lecture 19: Worksheet

### Fundamental theorem

Find the following integrals

1  $\int_1^3 x^3 dx$

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

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

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

Now a bit harder ones:

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

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

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

$$8 \quad \int_0^e \frac{1}{1+x} dx$$