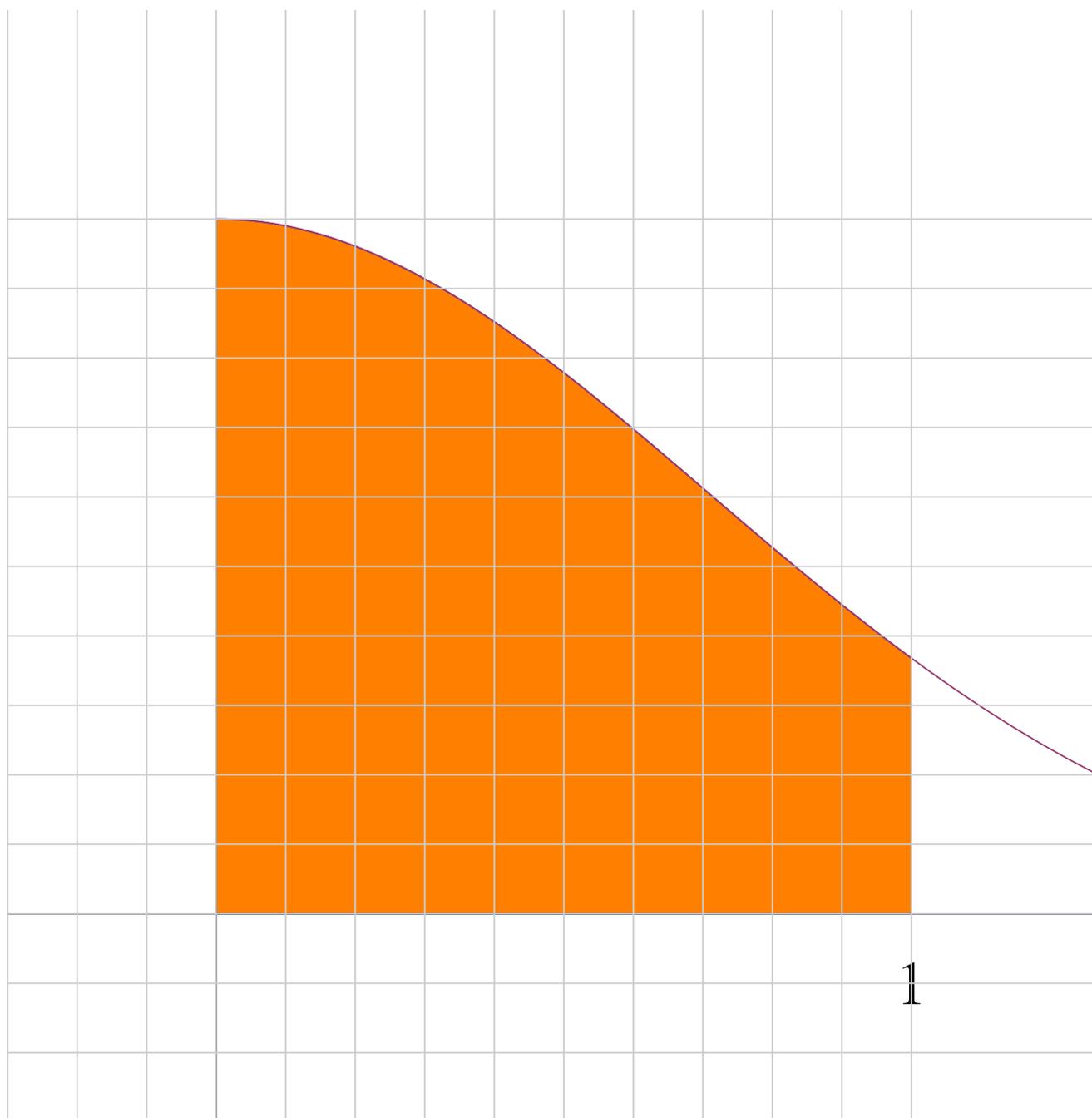


Lecture 18: Worksheet

- 1 The following picture shows the graph of \exp^{-x^2} from 0 to 1. You also see a grid of width $h = 1/10$. Estimate the area

$$\int_0^1 e^{-x^2} dx$$

by estimating the Riemann sum.



In the following, you can use that if $f = \frac{d}{dx}F(x)$, then

$$\int_a^b f(x) dx = F(b) - F(a) .$$

2 $\int_0^2 x^5 dx$.

3 $\int_{-1}^1 x(1-x) dx$.

4 $\int_0^1 e^x dx$.

5 $\int_1^2 \frac{1}{x} dx$

6 $\int_0^1 \frac{1}{1+x^2} dx$