By now, we know how to compute the definite integral
- (potentially, not part of this course) as a limit of the Riemann sums
- using the (signed) area under the curve
- if odd function is integrated over the symmetric interval.

Also, we stated the Fundamental Theorem of Calculus.
Recall: Let $g(x) = \int_0^x f(t) \, dt$. Then, $g'(x) = f(x)$
(we used that $f$ is continuous)

Conclusion

1. $\frac{d}{dx} \int_0^x f(t) \, dt = g'(x) = f(x)$

2. $\int_a^b f(t) \, dt = \int_0^a f(t) \, dt + \int_a^b f(t) \, dt = -\int_0^a f(t) \, dt + \int_0^b f(t) \, dt = -g(a) + g(b)$

$\int_a^b f(t) \, dt = \int_a^b g'(t) \, dt$

$\Rightarrow \int_a^b g'(t) \, dt = g(b) - g(a)$ (if $g$ is differentiable)

Main goal for today: learn how to compute integrals
Also: indefinite integrals and another approach to integration