$$T_1 = \left\{ \frac{1}{\sqrt{2}}, \cos t, \sin t \right\}$$

$$T = 2\pi \qquad \omega = \frac{T}{2\pi} = 1$$

$$\langle u, v \rangle = \frac{2}{2\pi} \int_0^{2\pi} \bar{u}(t)\, v(t)\, dt$$

$$\left\langle \frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}} \right\rangle = \ldots = 1$$

$$\langle \cos t, \cos t \rangle = \ldots = 1$$

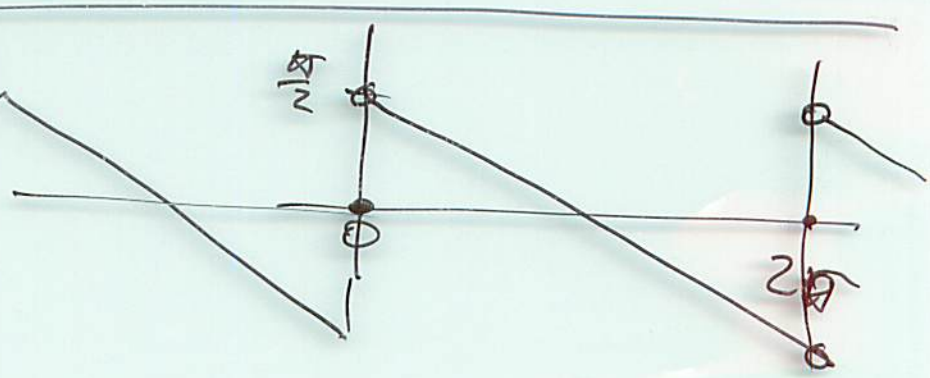
$$\langle \sin t, \sin t \rangle = 1$$

$$\left\langle \frac{1}{\sqrt{2}}, \cos t \right\rangle = \left\langle \frac{1}{\sqrt{2}}, \sin t \right\rangle = \langle \sin t, \cos t \rangle = 0$$

$$\frac{1}{\sqrt{2}} \perp \cos t \,, \quad \frac{1}{\sqrt{2}} \perp \sin t$$

$$\sin t \perp \cos t$$

Sageza: $S(t)$

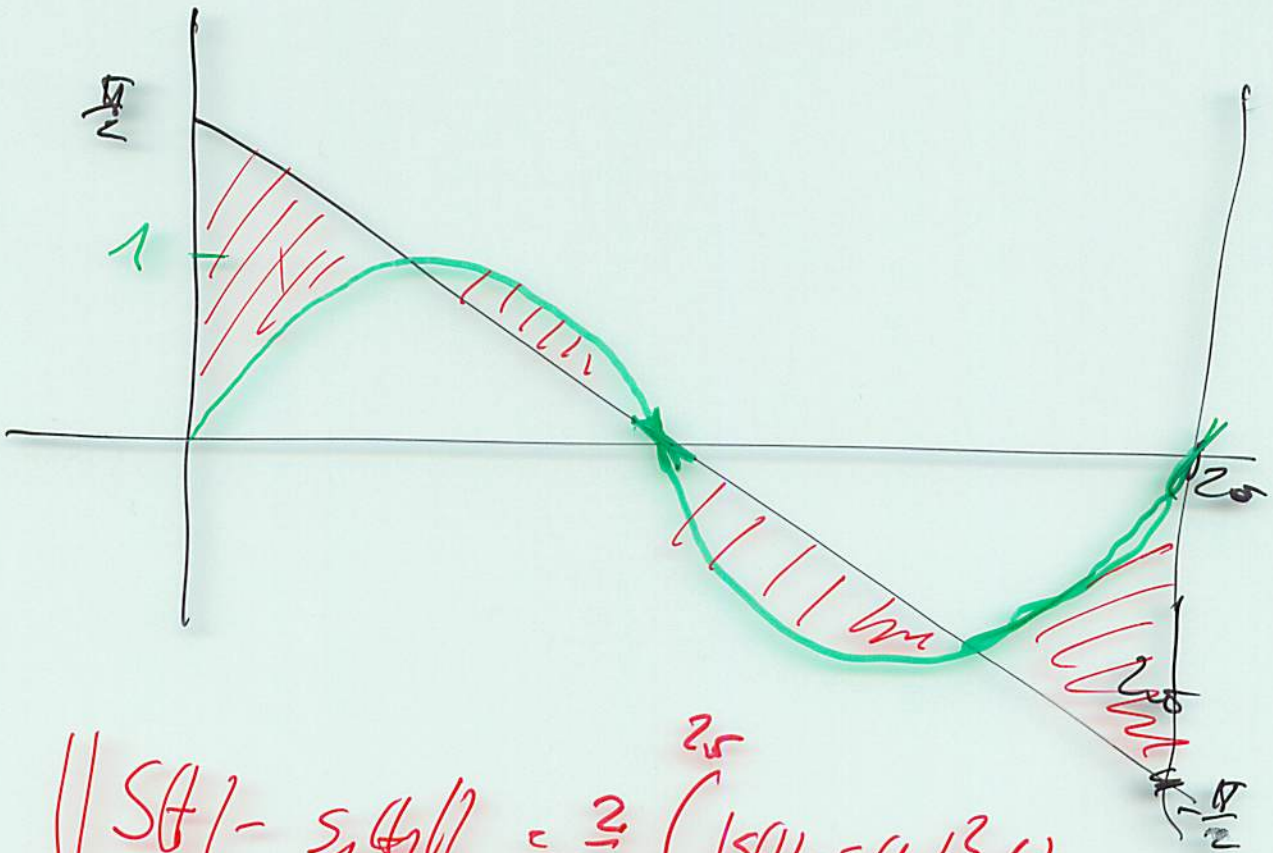


$$S(t) = \underbrace{\sin t}_{S_1(t)} + \underbrace{\frac{\sin 2t}{2} \dots}_{S_2(t)}$$

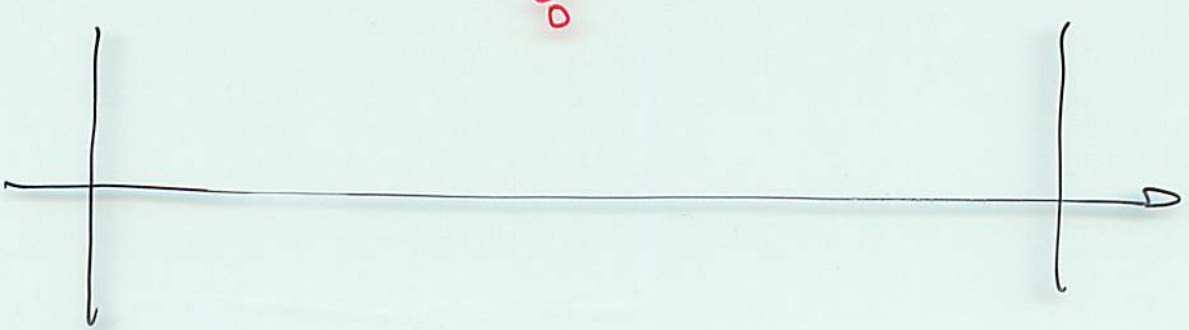
Beh.

$$\|S(t) - S_1(t)\| = \|S(t) - \sin t\|$$

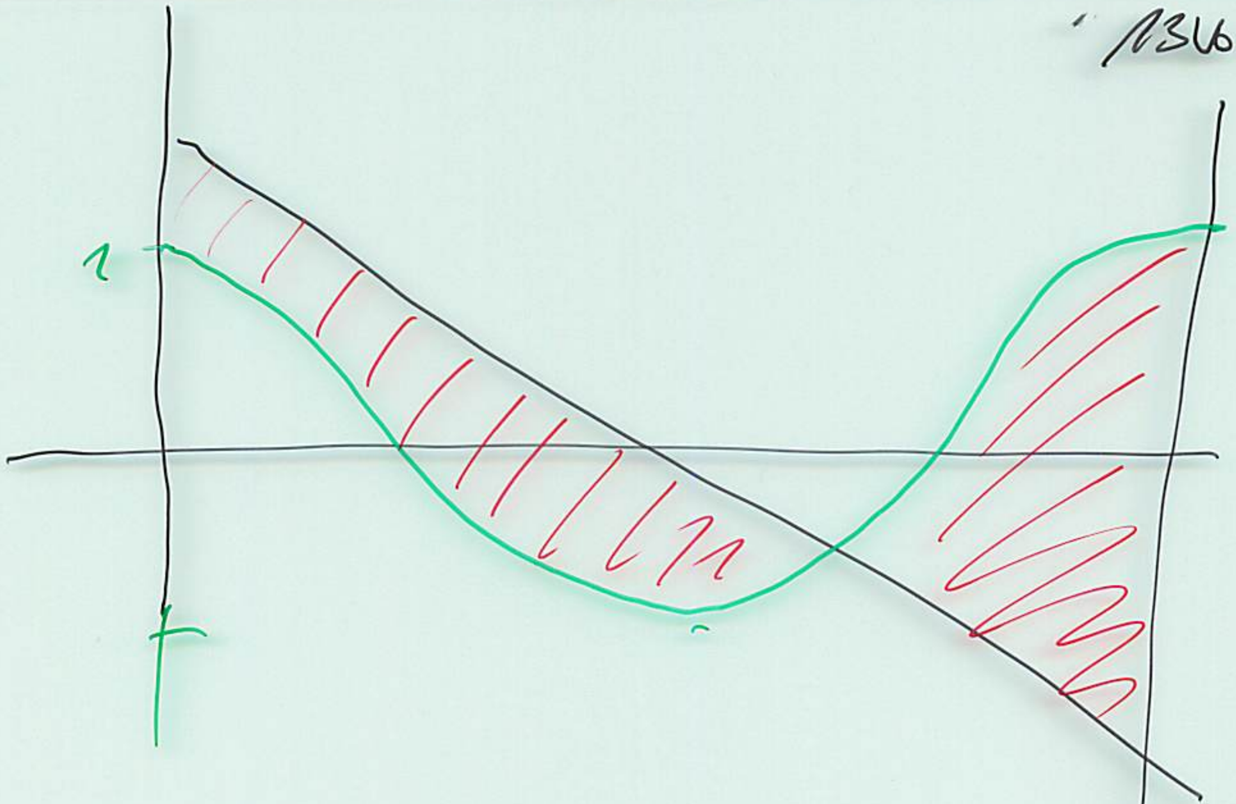
$$\leq \|S(t) - c_0 \frac{1}{\sqrt{2}} - c_1 \cos t - c_2 \sin t\| \quad \forall c_0, c_1, c_2$$

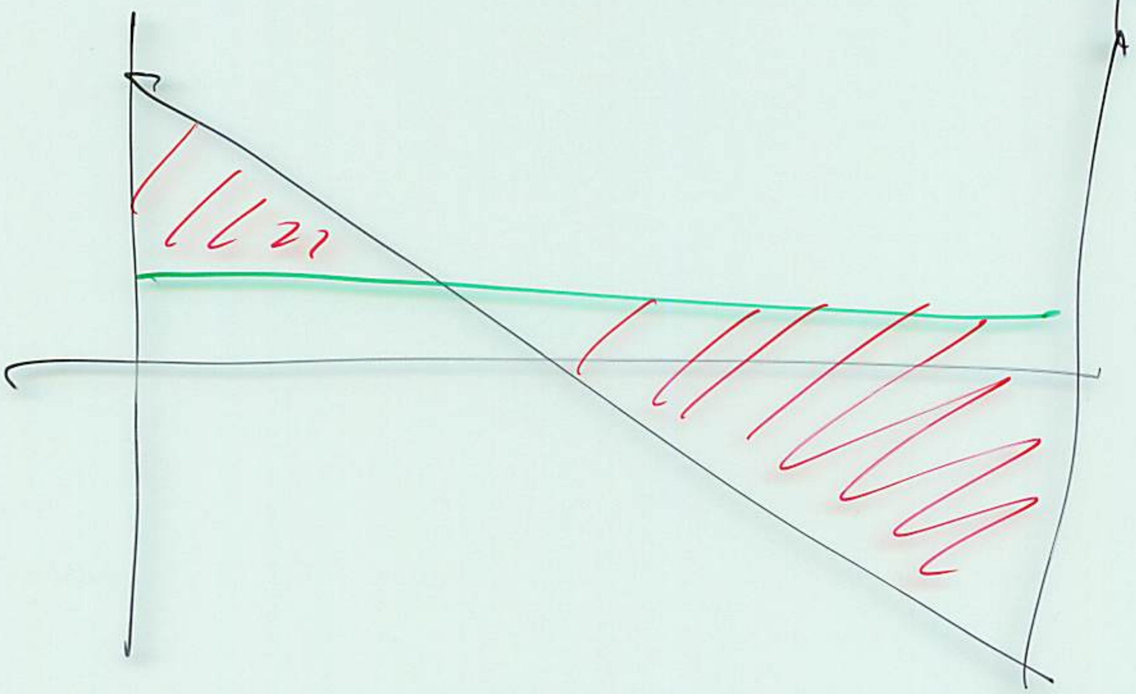


$$\|S(t) - S_1(t)\| = \frac{2}{2\pi} \int_0^{2\pi} |S(t) - S_1(t)|^2 \, dt$$



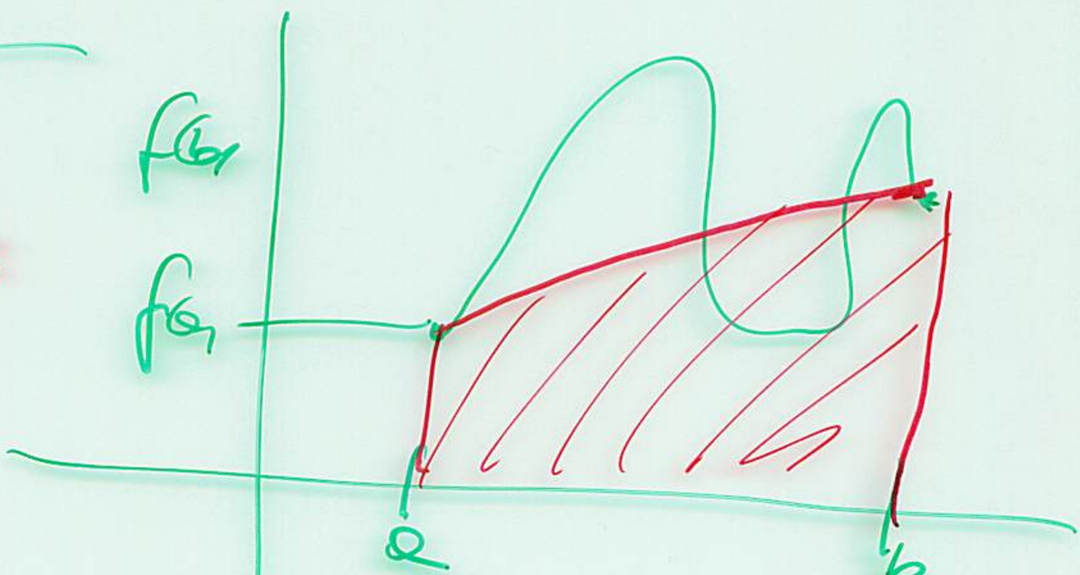
1316 ©





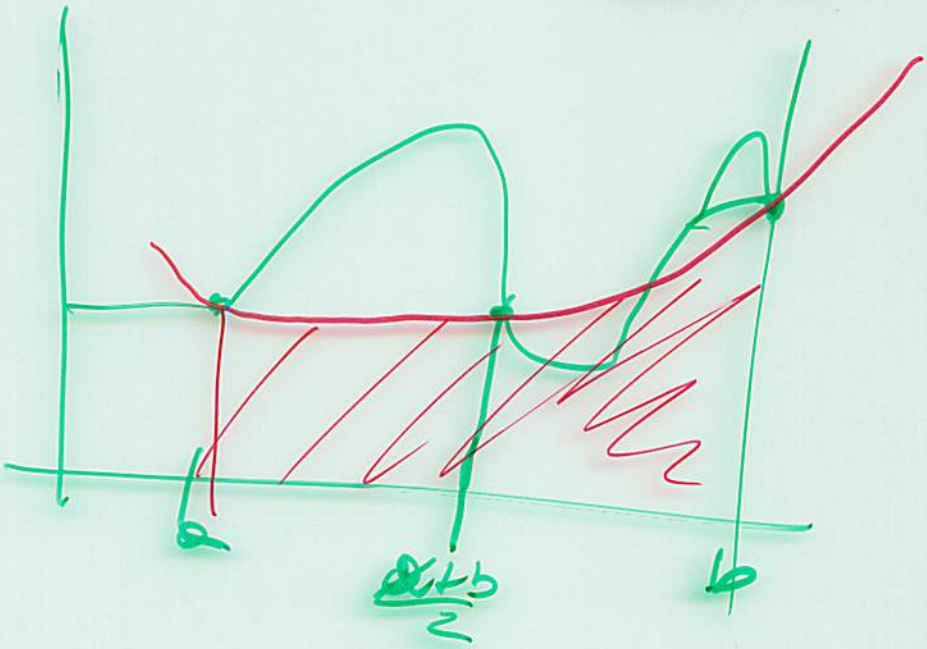
Trapezregel

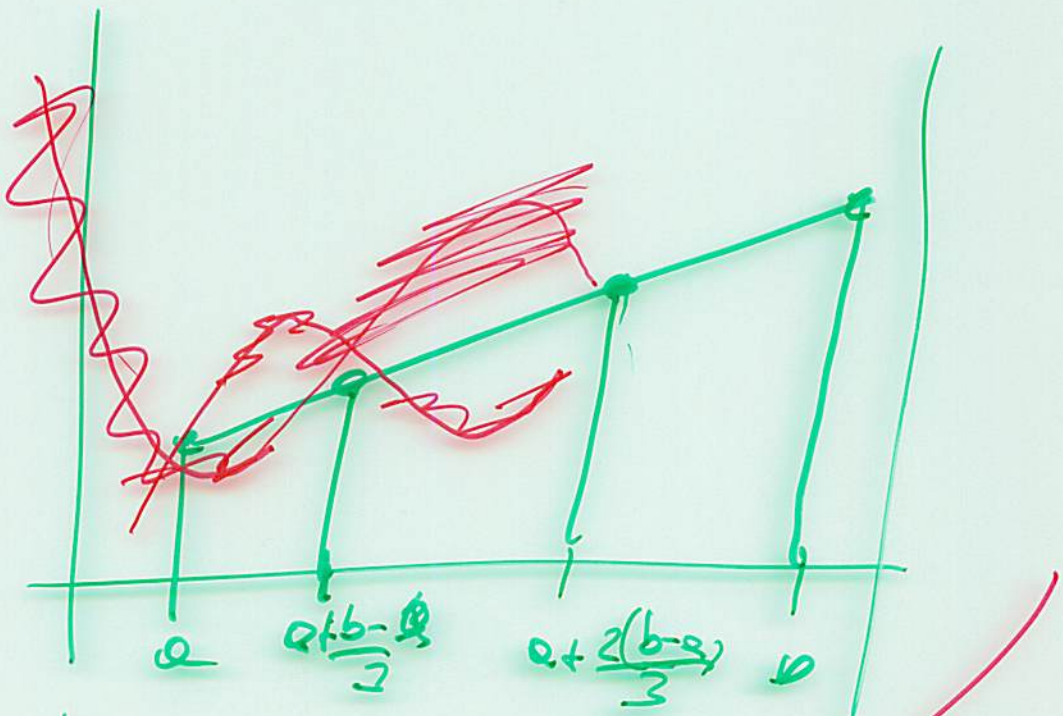
$$(b-a)\,\frac{f(a)+f(b)}{2}$$

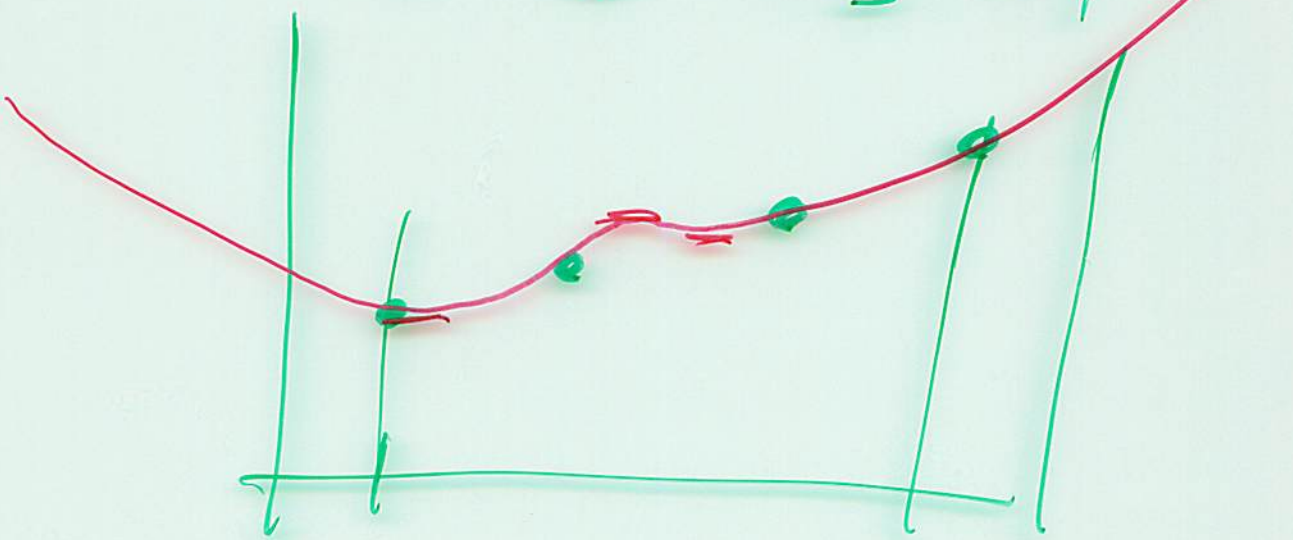


13.6 G

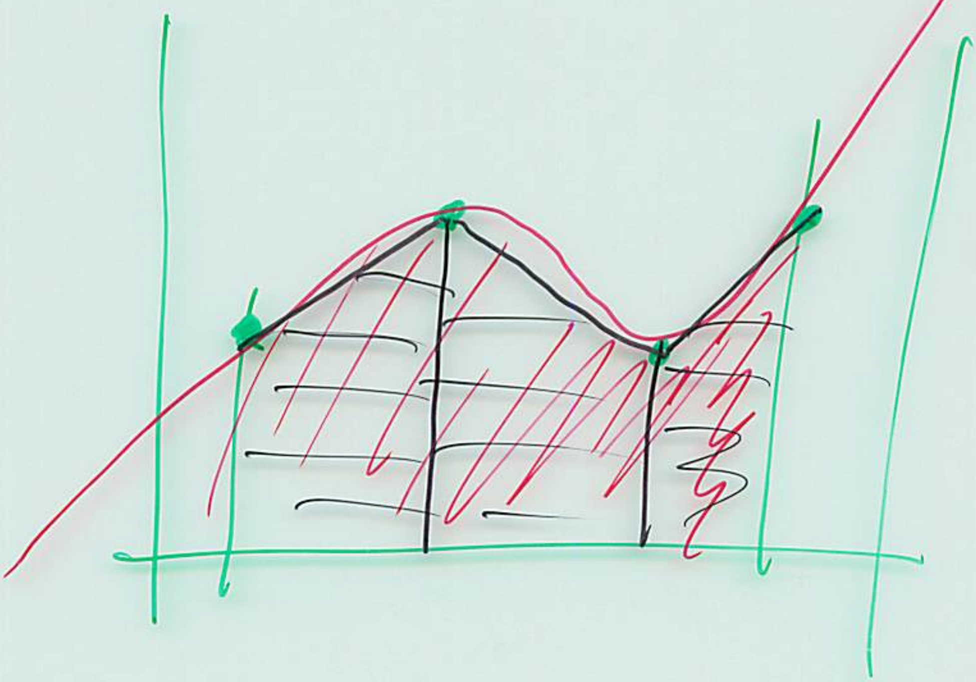
$n = 2$







ASU. ⑤



Zus. ges.