$$\int_0^\pi \sin^7(x)\,dx = \int_0^\pi \cancel{\sin(1-\cos^6 x)}\,dx \quad \left| \begin{array}{l} \cos x = y \\ -\sin x\,dx = dy \end{array} \right| = -\int_{\cos 0}^{\cos\pi} 1 - y^6\,dy =$$

Tohle není dobře.

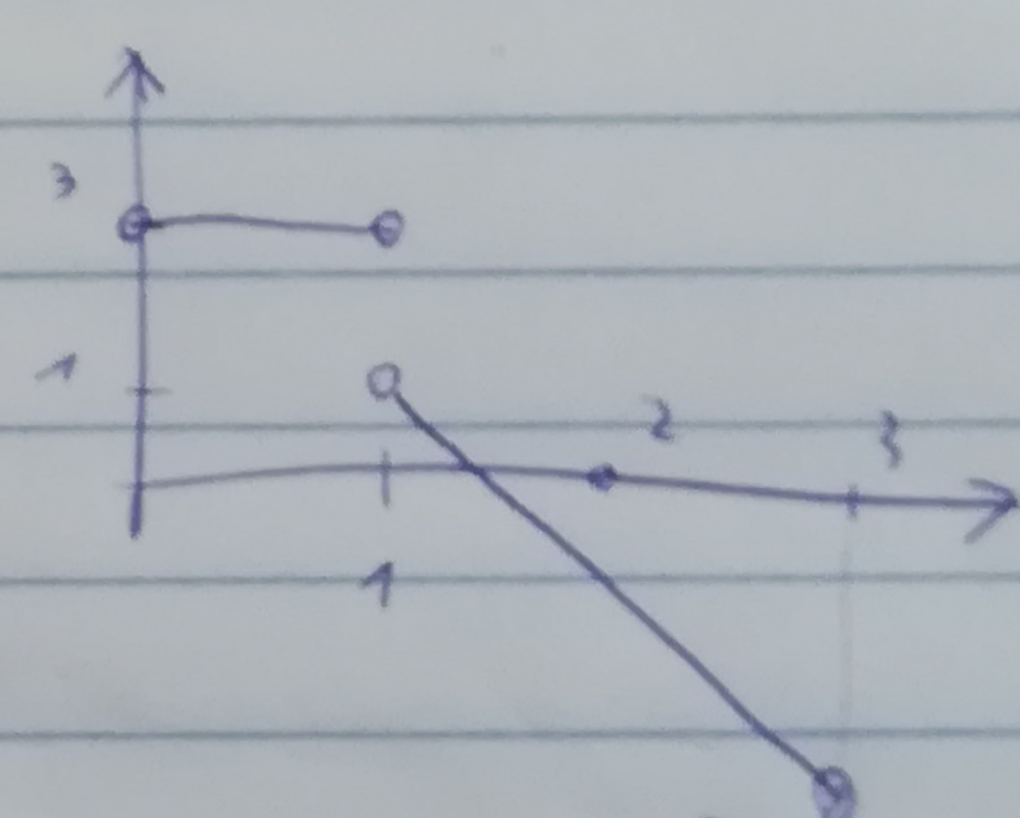
$$= -\left[y - \frac{y^7}{7}\right]_1^0 = 0 - \left(-\left(1 - \frac{1}{7}\right)\right) = \frac{6}{7}$$

$$\int_0^{\frac{\pi}{4}} \frac{1}{2+\cos(x)}\,dx = \left[\frac{2}{\sqrt{3}} \operatorname{arctg} \frac{\operatorname{tg}\frac{x}{2}}{\sqrt{3}}\right]_0^{\frac{\pi}{4}} \doteq 0{,}271$$

$$\int_0^{\pi} \frac{1}{2+\cos(x)}\,dx = \left[\frac{2}{\sqrt{3}} \operatorname{arctg} \frac{\operatorname{tg}\frac{x}{2}}{\sqrt{3}}\right]_0^{\pi} = \frac{\pi}{\sqrt{3}}$$

ok

$$f(x) = \begin{cases} 3 & x \in (0,1) \\ 3-2x & x \in (1,3) \end{cases}$$



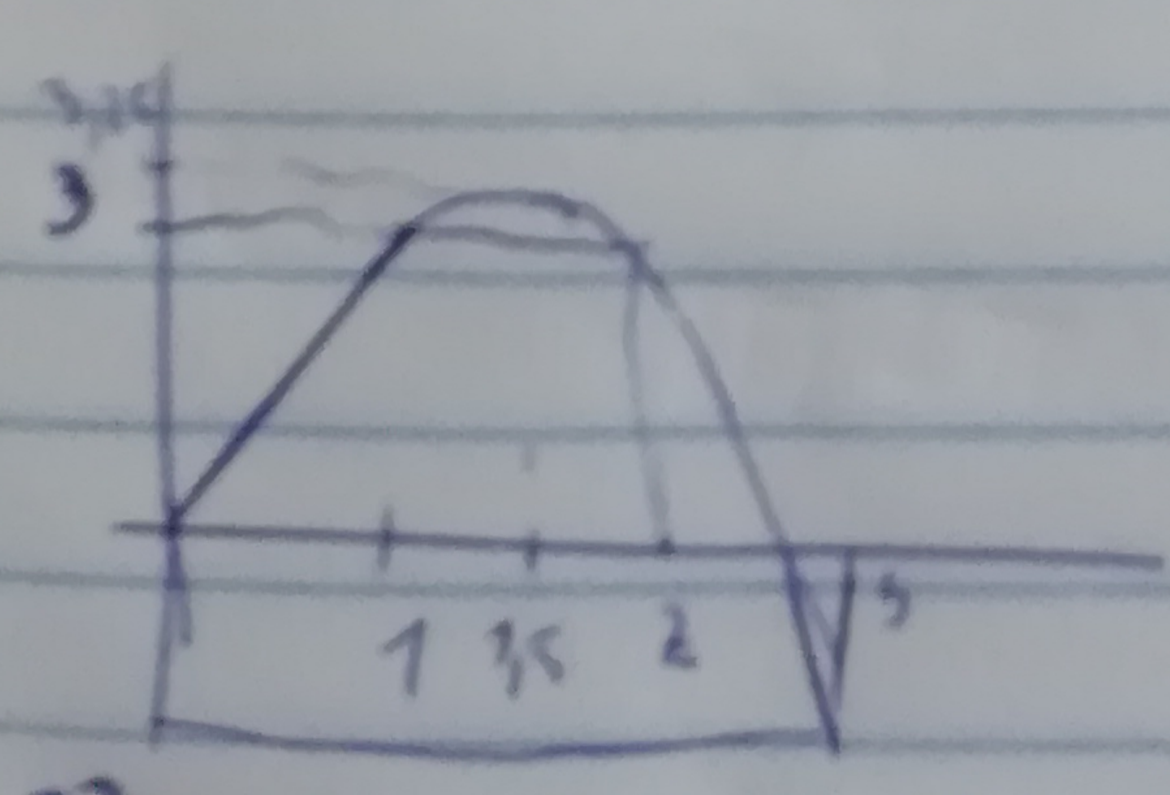
$t \in (0,1) \quad R(t) = 3 \cdot t$

$t \in (1;1{,}5) \quad R(t) = 3 \cdot 1 + \frac{1+3-2t}{2} \cdot (t-1) = 3 + (2-t)(t-1) = -t^2 + 3t + 1$

$t \in (1{,}5;3) \quad R(t) = 3 \cdot 1 + 0{,}5 \cdot 1 \cdot 0{,}5 + \frac{3{,}0-2t}{2} \cdot (t-1{,}5) =$

$= 3{,}25 + (1{,}5-t) \cdot (t-1{,}5) =$

$= -t^2 + 3t + 1$



$$R'(t) \begin{cases} (0,1) & 3 \\ (1,3) & -2t+3 \end{cases}$$

ok