

## Serie 5

Monday, April 2, 2018 22:04

### Aufgabe 3

$$a) \frac{1}{2} r^2 (\varphi - \sin(\varphi)) = \frac{1}{4} r^2 \pi$$

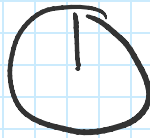
$$2(\varphi - \sin(\varphi)) = \pi$$

$$\sin(\varphi) - \varphi = -\frac{\pi}{2}$$

$$b) \text{Tank voll: } \varphi = 0$$

$$\text{Tank halbvoll: } \varphi = \pi$$

$$\text{Tank } \frac{3}{4} \text{ voll: } \frac{\pi}{2} = \varphi_0$$



Fixpunktiteration:

...

$$x_{17} = 2.310$$

$$x_{18} = 2.310$$

$$\approx \underline{\underline{0.74\pi}}$$