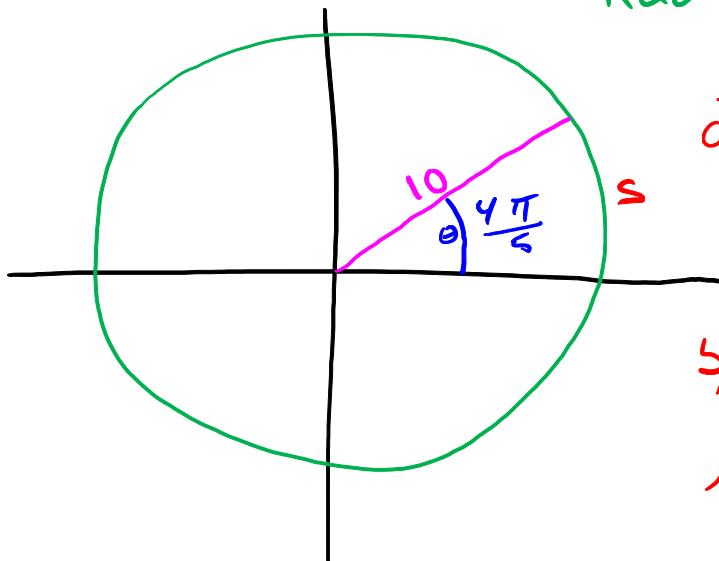


Kapitel 1.3

Radius 10m

①



$$s = \text{radius} \cdot \theta$$

$$10 \cdot \frac{4\pi}{5} = \frac{40\pi}{5} = \underline{\underline{8\pi}}$$

a) Grad agor wurd in Radiant umrechnen
1 Grad = $\frac{\pi}{180}$

$$110^\circ \cdot \frac{\pi}{180} = \frac{110\pi}{180} = \frac{11\pi}{18}$$

$$\frac{10}{1} \cdot \frac{11\pi}{18} = \frac{110\pi}{18} = \underline{\underline{\frac{55\pi}{9}}}$$

110° , da 1π die Umkreis

②

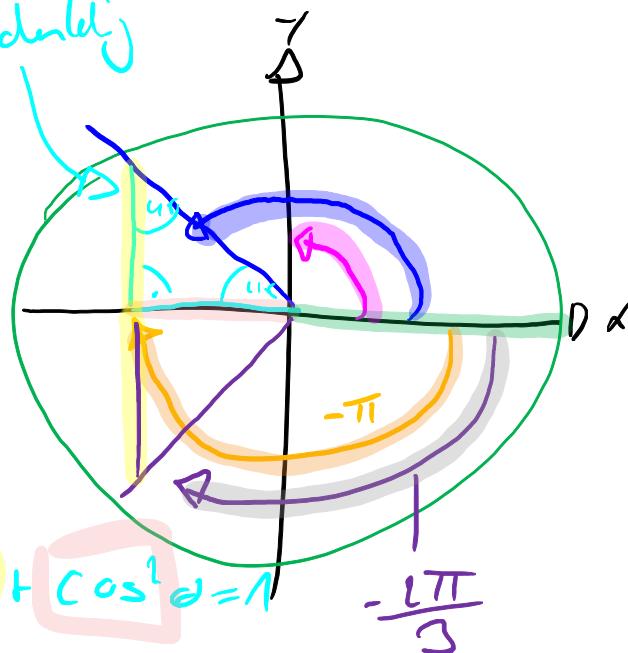
	0	$-\pi$	$-2\pi/3$	0	$\pi/2$	$3\pi/4$
$\sin \theta$						
$\cos \theta$						
$\tan \theta$						

$$\frac{\pi}{2}$$

$$\sin \frac{\pi}{2} = 1$$

$$\cos \frac{\pi}{2} = 0$$

gleichschreib



$$\sin^2 \theta + \cos^2 \theta = 1$$

$$-\frac{1\pi}{3}$$

$$\frac{3\pi}{4}$$

$$\sin^2 \left(\frac{3\pi}{4}\right) = \frac{1}{2}$$

$$\sin^2 \left(\frac{3\pi}{4}\right) = \frac{\sqrt{2}}{2}$$

$$\cos^2 \left(\frac{3\pi}{4}\right) = -\frac{\sqrt{2}}{2}$$

$$\theta = 0$$

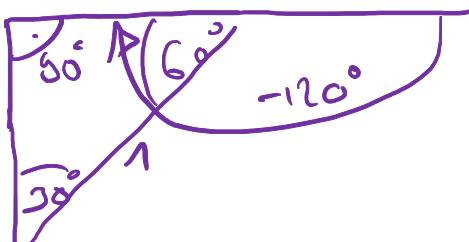
$$\cos(0) = 1$$

$$\sin(0) = 0$$

$$\theta = -\pi$$

$$\cos(-\pi) = -1$$

$$\sin(-\pi) = 0$$

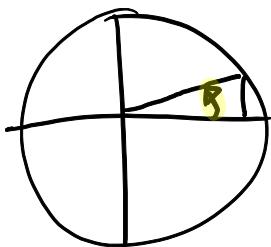


$$-\frac{2\pi}{3}$$

$$\sin\left(-\frac{2\pi}{3}\right) = -\frac{\sqrt{3}}{2}$$

$$\cos\left(-\frac{2\pi}{3}\right) = -\frac{1}{2}$$

$$\tan \theta = \frac{\sin \theta}{\cos \theta} = \frac{\Delta y}{\Delta x} = m$$



$$\tan 0 = 0$$

$$\tan \frac{\pi}{2} = \infty$$

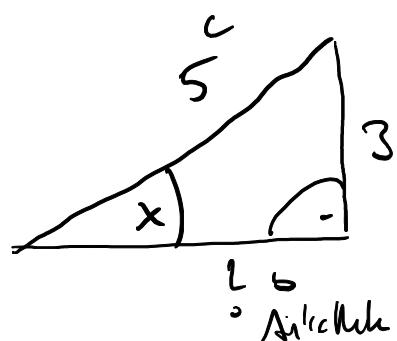
$$\tan \frac{\pi}{4} = 1$$

$$\tan \left(\frac{3\pi}{4} \right) = \frac{\frac{\sqrt{2}}{2}}{-\frac{\sqrt{2}}{2}} = -1$$

$$\tan \left(-\frac{2\pi}{3} \right) = \frac{-\frac{\sqrt{3}}{2}}{-\frac{1}{2}} = \sqrt{3}$$

③ $\sin x = \frac{3}{5}$ gegenleitende
Hypotenuse

$$x \in \left[\frac{\pi}{2}, \pi \right]$$



$$\cos x = -\frac{4}{5}$$

$$\tan x = -\frac{3}{4}$$

$$a^2 + b^2 = c^2$$

$$3^2 + b^2 = 5^2$$

$$9 + b^2 = 25$$

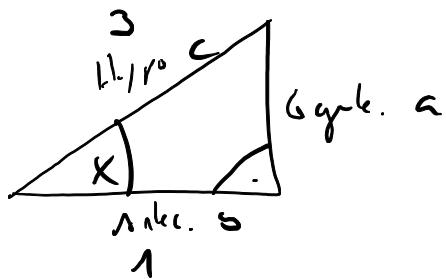
$$b^2 = 16$$

$$b = \underline{\underline{4}}$$

13
17

④

$$\cos x = \frac{1}{3} \quad x \in \left[-\frac{\pi}{2}, 0\right]$$



$$a^2 + b^2 = c^2$$

$$1^2 + b^2 = 3^2$$

$$1^2 + b^2 = 9$$

$$\begin{array}{l} | -1 \\ | \cancel{+} \end{array}$$

$$\begin{array}{l} a^2 = 8 \\ \underline{\underline{a = \sqrt{8}}} \end{array}$$

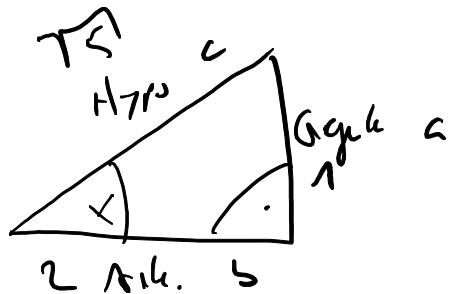
$$\sin x = -\frac{\sqrt{8}}{3} \quad \checkmark$$

$$\tan x = -\frac{\sqrt{8}}{1} \quad \checkmark$$

$$\begin{array}{l} a^2 + b^2 = 9 \\ a^2 = 8 \\ \underline{\underline{a = \sqrt{8}}} \end{array}$$

⑤

$$\tan x = \frac{1}{2}, \quad x \in \left[\pi, \frac{3\pi}{2}\right]$$



$$1^2 + 2^2 = c^2$$

$$1 + 4 = c^2$$

$$\begin{array}{l} 5 = c^2 \\ \underline{\underline{c = \sqrt{5}}} \end{array}$$

$$\sin x = -\frac{1}{\sqrt{5}} \quad \checkmark$$

$$\cos x = -\frac{2}{\sqrt{5}} \quad \checkmark$$

