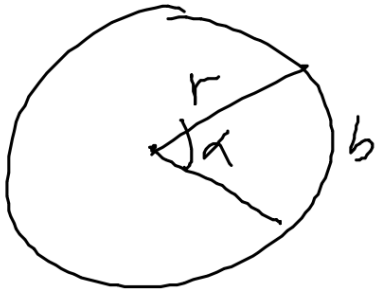
Radiaani

- kulmamitta, kuten astekin
- puhdas luku, ei yksikköä
- muista vaihtaa laskin oikeaan moodiin
- Symb. laskimessa RAD-tila antaa yksinkert. vastauksen

– täysi ympyrä, asteluku 360°



$$\alpha = \frac{b}{r} = \frac{2\pi r}{r} = 2\pi$$

– Muutos aste ⟷ radiaani

1. Tee taulukko
2. Ratk. Suoraan verrannolla kertomalla ristiin

Esim. Muunna 1 rad asteiksi

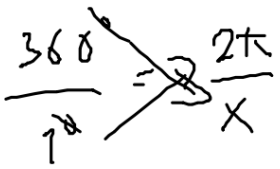
asteet	radiaanit
360°	2π
X	1

$$\frac{360°}{X} = \frac{2\pi}{1}$$

$$2\pi X = 360°$$
$$X = 360° : 2\pi \quad \| : 2\pi$$
$$= \frac{180°}{\pi} \approx 57{,}3°$$

b) 1° radiaanreiba

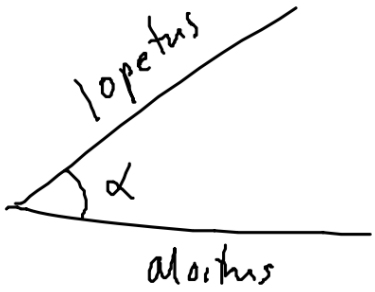
ast	rad
360°	2π
1°	x



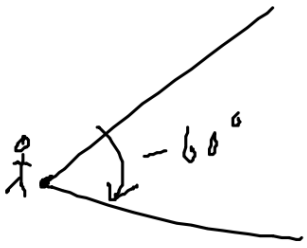
$$360x = 2\pi \quad /:360$$

$$x = \frac{2\pi}{360} = \frac{\pi}{180} = 0,017 \text{ (rad)}$$

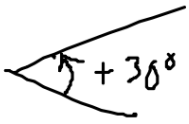
- Suunnaton kulma: asteluku + tai −



myötäpäivään miinusta

a) 

b) $\frac{\pi}{6} = \frac{180^\circ}{6} = 30^\circ$

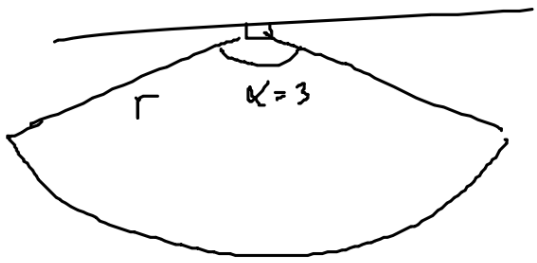


208.

helpommin:

$\alpha = \frac{b}{r}$

$\rightarrow r = \frac{b}{\alpha}$



rad	ast.
3	x
2π	360°

$2\pi x = 1080°$

$x = \frac{540°}{\pi} \approx 171,89°$

MA3/MAOL: $b = \frac{\alpha}{360°} \cdot 2\pi r \quad \| : \frac{\alpha}{360°} \cdot 2\pi$

$r = \frac{b}{\frac{\alpha}{360°} \cdot 2\pi} = \frac{b}{\frac{\pi\alpha}{180°}} = \frac{180° b}{\pi\alpha} = \frac{180° \cdot 13,5\ m}{\pi \cdot 171,89°}$

$\approx 4,5\ m$