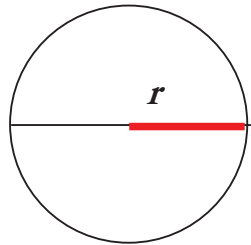


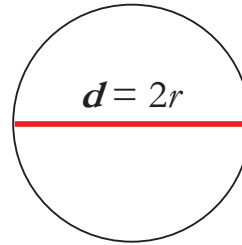


Ympyrä

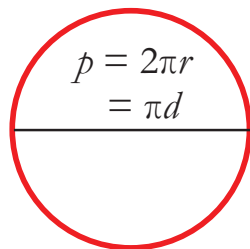
säde



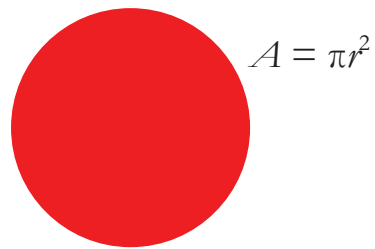
halkaisija



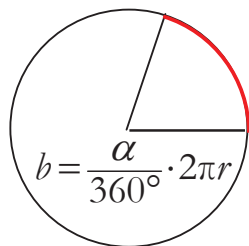
kehä



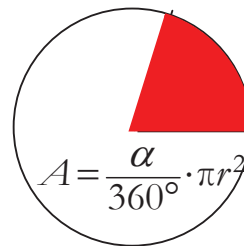
pinta-ala



kaari

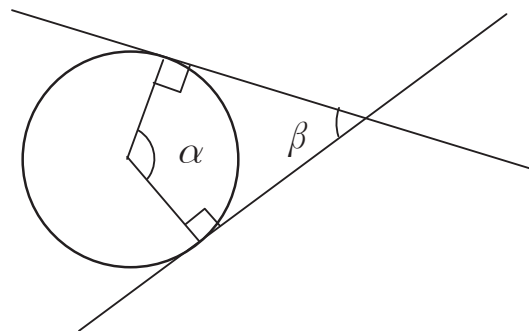


sektori



tangentti

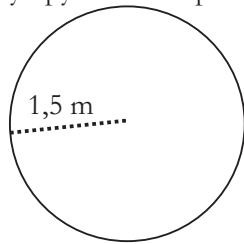
- Tangentti ja säde ovat aina kohtisuorassa.
- Ympyrän ulkopuolisesta pisteestä voidaan piirtää kaksi tangenttia.
- $\alpha + \beta = 180^\circ$



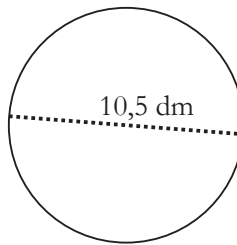
Tehtäviä ympyrästä

1. Laske ympyrän kehän pituus.

a)



b)



2. Laske ympyrän kehän pituus ja ala, kun

a) säde on 14 mm

b) halkaisija on 22 m.

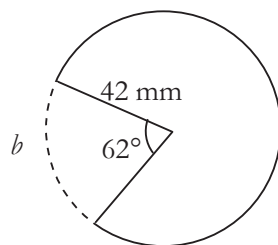
3. Laske ympyrän

a) ala, kun sen kehän pituus on 140 cm

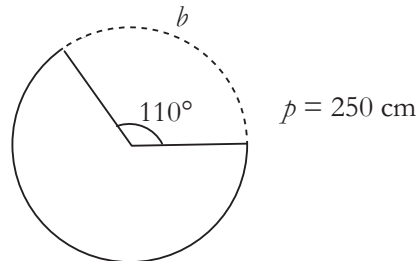
b) säde, kun sen ala on 248 cm^2 .

4. Laske kaaren pituus b .

a)



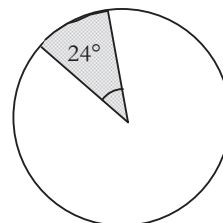
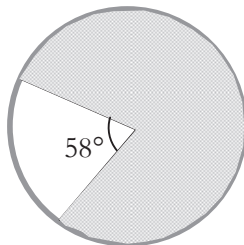
b)



5. Laske tummennetun alueen ala, kun

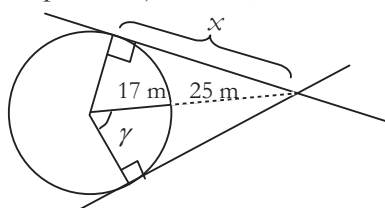
a) ympyrän halkaisija on 4,02 dm

b) ympyrän kehä on 116 cm.

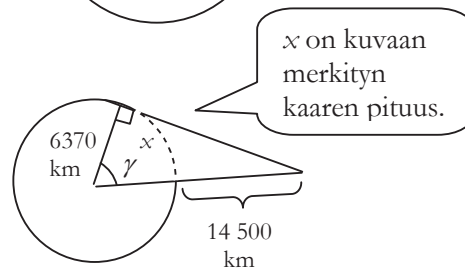


6. Laske pituus x ja kulma γ .

a)



b)



Vastaukset

- | | | | |
|-----------------------------------|------------------------------|---------------------------|--------------------------|
| 1. a) 9,4 m | b) 33,0 dm | 4. a) 45 mm | b) 76 cm |
| 2. a) 88 mm ja 620 mm^2 | b) 69 m ja 380 m^2 | 5. a) $10,6 \text{ dm}^2$ | b) $71,4 \text{ cm}^2$ |
| 3. a) $15,6 \text{ dm}^2$ | b) 8,88 cm | 6. a) 38 m ja 66° | b) 8030 km ja 72° |