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Circle Formulas

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List of 25 Circle Formulas

Circle 🔗

Area of Circle 🔗

1) Area of Circle 🔗

fx $A = \pi \cdot r^2$

ex $78.53982 \text{m}^2 = \pi \cdot (5\text{m})^2$

2) Area of Circle given Chord Length 🔗

fx $A = \pi \cdot \left(\dfrac{l_c}{2 \cdot \sin\left(\frac{\angle_{\text{Central}}}{2}\right)} \right)^2$

ex $50.65023 \text{m}^2 = \pi \cdot \left(\dfrac{8\text{m}}{2 \cdot \sin\left(\frac{170°}{2}\right)} \right)^2$

3) Area of Circle given Circumference 🔗

fx $A = \dfrac{C^2}{4 \cdot \pi}$

ex $71.61972 \text{m}^2 = \dfrac{(30\text{m})^2}{4 \cdot \pi}$

4) Area of Circle given Diameter ⎘

Open Calculator ⎘

fx $A = \dfrac{\pi}{4} \cdot D^2$

ex $78.53982\text{m}^2 = \dfrac{\pi}{4} \cdot (10\text{m})^2$

Chord Length of Circle ⎘

5) Chord Length of Circle ⎘

Open Calculator ⎘

fx $l_c = 2 \cdot r \cdot \sin\left(\dfrac{\angle_{\text{Central}}}{2}\right)$

ex $9.961947\text{m} = 2 \cdot 5\text{m} \cdot \sin\left(\dfrac{170°}{2}\right)$

6) Chord Length of Circle given Diameter and Central Angle ⎘

Open Calculator ⎘

fx $l_c = D \cdot \sin\left(\dfrac{\angle_{\text{Central}}}{2}\right)$

ex $9.961947\text{m} = 10\text{m} \cdot \sin\left(\dfrac{170°}{2}\right)$

7) Chord Length of Circle given Diameter and Inscribed Angle ⎘

Open Calculator ⎘

fx $l_c = D \cdot \sin(\angle_{\text{Inscribed}})$

ex $9.961947\text{m} = 10\text{m} \cdot \sin(85°)$

8) Chord Length of Circle given Inscribed Angle 🡕

Open Calculator 🡕

fx $l_c = 2 \cdot r \cdot \sin(\angle_{\text{Inscribed}})$

ex $9.961947\text{m} = 2 \cdot 5\text{m} \cdot \sin(85°)$

9) Chord Length of Circle given Perpendicular Length 🡕

Open Calculator 🡕

fx $l_c = 2 \cdot \sqrt{r^2 - l_{\text{Perpendicular}}^2}$

ex $8\text{m} = 2 \cdot \sqrt{(5\text{m})^2 - (3\text{m})^2}$

Circumference of Circle 🡕

10) Circumference of Circle 🡕

Open Calculator 🡕

fx $C = 2 \cdot \pi \cdot r$

ex $31.41593\text{m} = 2 \cdot \pi \cdot 5\text{m}$

11) Circumference of Circle given Arc Length 🡕

Open Calculator 🡕

fx $C = \dfrac{2 \cdot \pi \cdot l_{\text{Arc}}}{\angle_{\text{Central}}}$

ex $31.76471\text{m} = \dfrac{2 \cdot \pi \cdot 15\text{m}}{170°}$

12) Circumference of Circle given Area 📲

fx $C = \sqrt{4 \cdot \pi \cdot A}$

ex $31.70662m = \sqrt{4 \cdot \pi \cdot 80m^2}$

13) Circumference of Circle given Chord Length 📲

fx $C = \dfrac{2 \cdot \pi \cdot l_c}{2 \cdot \sin\left(\frac{\angle_{Central}}{2}\right)}$

ex $25.22874m = \dfrac{2 \cdot \pi \cdot 8m}{2 \cdot \sin\left(\frac{170°}{2}\right)}$

14) Circumference of Circle given Diameter 📲

fx $C = \pi \cdot D$

ex $31.41593m = \pi \cdot 10m$

Diameter of Circle 📲

15) Diameter of Circle 📲

fx $D = 2 \cdot r$

ex $10m = 2 \cdot 5m$

16) Diameter of Circle given Arc Length ⤴

fx $\boxed{D = \dfrac{2 \cdot l_{Arc}}{\angle_{Central}}}$

ex $\boxed{10.11102m = \dfrac{2 \cdot 15m}{170°}}$

17) Diameter of Circle given Area ⤴

fx $\boxed{D = 2 \cdot \sqrt{\dfrac{A}{\pi}}}$

ex $\boxed{10.09253m = 2 \cdot \sqrt{\dfrac{80m^2}{\pi}}}$

18) Diameter of Circle given Circumference ⤴

fx $\boxed{D = \dfrac{C}{\pi}}$

ex $\boxed{9.549297m = \dfrac{30m}{\pi}}$

Inscribed Angle of Circle 🔗

19) Inscribed Angle of Circle 🔗

Open Calculator 🔗

fx $\angle_{\text{Inscribed}} = \pi - \dfrac{\angle_{\text{Central}}}{2}$

ex $95° = \pi - \dfrac{170°}{2}$

20) Inscribed Angle of Circle given Arc Length 🔗

Open Calculator 🔗

fx $\angle_{\text{Inscribed}} = \pi - \dfrac{l_{\text{Arc}}}{2 \cdot r}$

ex $94.05633° = \pi - \dfrac{15m}{2 \cdot 5m}$

21) Inscribed Angle of Circle given other Inscribed Angle 🔗

Open Calculator 🔗

fx $\angle_{\text{Inscribed}} = \pi - \angle_{\text{Inscribed2}}$

ex $85° = \pi - 95°$

Radius of Circle 🔗

22) Radius of Circle given Arc Length 🔗

fx $r = \dfrac{l_{Arc}}{\angle_{Central}}$

ex $5.05551m = \dfrac{15m}{170°}$

23) Radius of Circle given Area 🔗

fx $r = \sqrt{\dfrac{A}{\pi}}$

ex $5.046265m = \sqrt{\dfrac{80m^2}{\pi}}$

24) Radius of Circle given Circumference 🔗

fx $r = \dfrac{C}{2 \cdot \pi}$

ex $4.774648m = \dfrac{30m}{2 \cdot \pi}$

25) Radius of Circle given Diameter C

fx $r = \dfrac{D}{2}$

Open Calculator C

ex $5m = \dfrac{10m}{2}$

Variables Used

- $\angle_{\textbf{Central}}$ Central Angle of Circle *(Degree)*
- $\angle_{\textbf{Inscribed}}$ Inscribed Angle of Circle *(Degree)*
- $\angle_{\textbf{Inscribed2}}$ Second Inscribed Angle of Circle *(Degree)*
- **A** Area of Circle *(Square Meter)*
- **C** Circumference of Circle *(Meter)*
- **D** Diameter of Circle *(Meter)*
- $\textbf{l}_{\textbf{Arc}}$ Arc Length of Circle *(Meter)*
- $\textbf{l}_{\textbf{c}}$ Chord Length of Circle *(Meter)*
- $\textbf{l}_{\textbf{Perpendicular}}$ Perpendicular Length to Chord of Circle *(Meter)*
- **r** Radius of Circle *(Meter)*

Constants, Functions, Measurements used

- Constant: **pi**, 3.14159265358979323846264338327950288
  Archimedes' constant

- Function: **sin**, sin(Angle)
  Trigonometric sine function

- Function: **sqrt**, sqrt(Number)
  Square root function

- Measurement: **Length** in Meter (m)
  Length Unit Conversion 🔗

- Measurement: **Area** in Square Meter (m²)
  Area Unit Conversion 🔗

- Measurement: **Angle** in Degree (°)
  Angle Unit Conversion 🔗

Check other formula lists

- **Circle Formulas** ⤴
- **Circular Arc Formulas** ⤴
- **Circular Quadrant Formulas** ⤴
- **Circular Ring Formulas** ⤴
- **Circular Sector Formulas** ⤴
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