Important Circular Sector Formulas PDF

Formulas
Examples
with Units

List of 12
Important Circular Sector Formulas

1) Area of Circle given Area of Sector Formula

Evaluate Formula

Formula

$$A_{Circle} = \frac{2 \cdot \pi \cdot A}{\angle_{Sector}}$$

Example with Units

$$81\,m^2 = \frac{2 \cdot 3.1416 \cdot 9\,m^2}{40°}$$

2) Diameter of Circle given Area of Sector Formula

Evaluate Formula

Formula

$$D = 2 \cdot \sqrt{\frac{2 \cdot A}{\angle_{Sector}}}$$

Example with Units

$$10.1554\,m = 2 \cdot \sqrt{\frac{2 \cdot 9\,m^2}{40°}}$$

3) Inscribed Angle of Circle given Area of Sector Formula

Evaluate Formula

Formula

$$\angle_{Inscribed} = \pi - \frac{A}{r^2}$$

Example with Units

$$159.3735° = 3.1416 - \frac{9\,m^2}{5\,m^2}$$

4) Radius of Circle given Area of Sector Formula

Evaluate Formula

Formula

$$r = \sqrt{\frac{2 \cdot A}{\angle_{Sector}}}$$

Example with Units

$$5.0777\,m = \sqrt{\frac{2 \cdot 9\,m^2}{40°}}$$

5) Angle of Circular Sector Formulas

5.1) Angle of Circular Sector given Arc Length Formula

Evaluate Formula

Formula

$$\angle_{Sector} = \frac{l_{Arc}}{r}$$

Example with Units

$$45.8366° = \frac{4\,m}{5\,m}$$

5.2) Angle of Circular Sector given Area of Circular Sector Formula

Evaluate Formula

Formula

$$\angle_{Sector} = \frac{2 \cdot A}{r^2}$$

Example with Units

$$41.253° = \frac{2 \cdot 9\,m^2}{5\,m^2}$$

6) Area of Circular Sector Formulas

6.1) Area of Circular Sector Formula

Evaluate Formula

Formula

$$A = \frac{\angle_{Sector}}{2} \cdot r^2$$

Example with Units

$$8.7266\,m^2 = \frac{40°}{2} \cdot 5\,m^2$$

6.2) Area of Circular Sector given Arc Length Formula

Evaluate Formula

Formula

$$A = \frac{r \cdot l_{Arc}}{2}$$

Example with Units

$$10\,m^2 = \frac{5\,m \cdot 4\,m}{2}$$

6.3) Area of Circular Sector given Area of Circle Formula

Evaluate Formula

Formula

$$A = \frac{\angle_{Sector}}{2 \cdot \pi} \cdot A_{Circle}$$

Example with Units

$$8.8889\,m^2 = \frac{40°}{2 \cdot 3.1416} \cdot 80\,m^2$$

7) Perimeter of Circular Sector Formulas

7.1) Perimeter of Circular Sector Formula

Evaluate Formula

Formula

$$P = \left(\angle_{Sector} + 2\right) \cdot r$$

Example with Units

$$13.4907\,m = \left(40° + 2\right) \cdot 5\,m$$

7.2) Perimeter of Circular Sector given Arc Length Formula

Evaluate Formula

Formula

$$P = l_{Arc} + 2 \cdot r$$

Example with Units

$$14\,m = 4\,m + 2 \cdot 5\,m$$

7.3) Perimeter of Circular Sector given Circumference of Circle Formula

Evaluate Formula

Formula

$$P = \left(C_{Circle} \cdot \frac{\angle_{Sector}}{2 \cdot \pi}\right) + \left(2 \cdot r\right)$$

Example with Units

$$13.3333\,m = \left(30\,m \cdot \frac{40°}{2 \cdot 3.1416}\right) + \left(2 \cdot 5\,m\right)$$

Variables used in list of Circular Sector Formulas above

- $\angle_{Inscribed}$ Inscribed Angle of Circle *(Degree)*
- $\angle_{Sector}$ Angle of Circular Sector *(Degree)*
- **A** Area of Circular Sector *(Square Meter)*
- A_{Circle} Area of Circle of Circular Sector *(Square Meter)*
- C_{Circle} Circumference of Circle of Circular Sector *(Meter)*
- **D** Diameter of Circle *(Meter)*
- l_{Arc} Arc Length of Circular Sector *(Meter)*
- **P** Perimeter of Circular Sector *(Meter)*
- **r** Radius of Circular Sector *(Meter)*

Constants, Functions, Measurements used in list of Circular Sector Formulas above

- constant(s): **pi**, 3.14159265358979323846264338327950288 *Archimedes' constant*
- Functions: **sqrt**, sqrt(Number) *A square root function is a function that takes a non-negative number as an input and returns the square root of the given input number.*
- Measurement: **Length** in Meter (m) *Length Unit Conversion*
- Measurement: **Area** in Square Meter (m²) *Area Unit Conversion*
- Measurement: **Angle** in Degree (°) *Angle Unit Conversion*

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