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Semicircle Formulas

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List of 25 Semicircle Formulas

Semicircle

Arc Length of Semicircle

1) Arc Length of Semicircle

Open Calculator

fx $l_{Arc} = \pi \cdot r$

ex $31.41593\text{m} = \pi \cdot 10\text{m}$

2) Arc Length of Semicircle given Area

Open Calculator

fx $l_{Arc} = \sqrt{2 \cdot \pi \cdot A}$

ex $31.70662\text{m} = \sqrt{2 \cdot \pi \cdot 160\text{m}^2}$

3) Arc Length of Semicircle given Area of Circle

Open Calculator

fx $l_{Arc} = \sqrt{A_{Circle} \cdot \pi}$

ex $31.70662\text{m} = \sqrt{320\text{m}^2 \cdot \pi}$

4) Arc Length of Semicircle given Diameter

Open Calculator

fx $$l_{Arc} = \frac{\pi}{2} \cdot D$$

ex $$31.41593\text{m} = \frac{\pi}{2} \cdot 20\text{m}$$

5) Arc Length of Semicircle given Perimeter

Open Calculator

fx $$l_{Arc} = \frac{\pi}{\pi + 2} \cdot P$$

ex $$30.55077\text{m} = \frac{\pi}{\pi + 2} \cdot 50\text{m}$$

Area of Semicircle

6) Area of Semicircle

Open Calculator

fx $$A = \frac{\pi}{2} \cdot r^2$$

ex $$157.0796\text{m}^2 = \frac{\pi}{2} \cdot (10\text{m})^2$$

7) Area of Semicircle given Arc Length

Open Calculator

fx $$A = \frac{l_{Arc}^2}{2 \cdot \pi}$$

ex $$143.2394\text{m}^2 = \frac{(30\text{m})^2}{2 \cdot \pi}$$

8) Area of Semicircle given Area of Circle

Open Calculator

fx $$A = \frac{A_{Circle}}{2}$$

ex $$160\text{m}^2 = \frac{320\text{m}^2}{2}$$

9) Area of Semicircle given Diameter of Semicircle

Open Calculator

fx $$A = \frac{\pi}{8} \cdot D^2$$

ex $$157.0796\text{m}^2 = \frac{\pi}{8} \cdot (20\text{m})^2$$

10) Area of Semicircle given Perimeter

Open Calculator

fx $$A = \frac{\pi}{2} \cdot \left(\frac{P}{\pi + 2}\right)^2$$

ex $$148.5472\text{m}^2 = \frac{\pi}{2} \cdot \left(\frac{50\text{m}}{\pi + 2}\right)^2$$

Diameter of Semicircle

11) Diameter of Semicircle

Open Calculator

fx $$D = 2 \cdot r$$

ex $$20\text{m} = 2 \cdot 10\text{m}$$

12) Diameter of Semicircle given Arc Length

Open Calculator

fx $$D = \frac{2}{\pi} \cdot l_{Arc}$$

ex $$19.09859\text{m} = \frac{2}{\pi} \cdot 30\text{m}$$

13) Diameter of Semicircle given Area

Open Calculator

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

ex $$20.18506\text{m} = 2 \cdot \sqrt{2 \cdot \frac{160\text{m}^2}{\pi}}$$

14) Diameter of Semicircle given Area of Circle

Open Calculator

fx $$D = 2 \cdot \sqrt{\frac{A_{Circle}}{\pi}}$$

ex $$20.18506\text{m} = 2 \cdot \sqrt{\frac{320\text{m}^2}{\pi}}$$

15) Diameter of Semicircle given Perimeter

Open Calculator

fx $$D = \frac{2}{\pi + 2} \cdot P$$

ex $$19.44923\text{m} = \frac{2}{\pi + 2} \cdot 50\text{m}$$

Perimeter of Semicircle

16) Perimeter of Semicircle

Open Calculator

fx $$P = (\pi + 2) \cdot r$$

ex $$51.41593\text{m} = (\pi + 2) \cdot 10\text{m}$$

17) Perimeter of Semicircle given Arc Length

Open Calculator

fx $$P = \frac{\pi + 2}{\pi} \cdot l_{Arc}$$

ex $$49.09859\text{m} = \frac{\pi + 2}{\pi} \cdot 30\text{m}$$

18) Perimeter of Semicircle given Area

Open Calculator

fx $$P = \pi \cdot \sqrt{\frac{2}{\pi} \cdot A} + 2 \cdot \sqrt{\frac{2}{\pi} \cdot A}$$

ex $$51.89168\text{m} = \pi \cdot \sqrt{\frac{2}{\pi} \cdot 160\text{m}^2} + 2 \cdot \sqrt{\frac{2}{\pi} \cdot 160\text{m}^2}$$

19) Perimeter of Semicircle given Area of Circle

Open Calculator

fx $$P = (\pi + 2) \cdot \sqrt{\frac{A_{Circle}}{\pi}}$$

ex $$51.89168\text{m} = (\pi + 2) \cdot \sqrt{\frac{320\text{m}^2}{\pi}}$$

20) Perimeter of Semicircle given Diameter

Open Calculator

fx $$P = \left(\frac{\pi}{2} + 1\right) \cdot D$$

ex $$51.41593\text{m} = \left(\frac{\pi}{2} + 1\right) \cdot 20\text{m}$$

Radius of Semicircle

21) Radius of Semicircle given Arc Length

Open Calculator

fx $$r = \frac{l_{Arc}}{\pi}$$

ex $$9.549297\text{m} = \frac{30\text{m}}{\pi}$$

22) Radius of Semicircle given Area

Open Calculator

fx $$r = \sqrt{\frac{2}{\pi} \cdot A}$$

ex $$10.09253\text{m} = \sqrt{\frac{2}{\pi} \cdot 160\text{m}^2}$$

23) Radius of Semicircle given Area of Circle

Open Calculator

fx $$r = \sqrt{\frac{A_{Circle}}{\pi}}$$

ex $$10.09253\text{m} = \sqrt{\frac{320\text{m}^2}{\pi}}$$

24) Radius of Semicircle given Diameter

Open Calculator

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

ex $$10\text{m} = \frac{20\text{m}}{2}$$

25) Radius of Semicircle given Perimeter

Open Calculator

fx $$r = \frac{P}{\pi + 2}$$

ex $$9.724613\text{m} = \frac{50\text{m}}{\pi + 2}$$

Variables Used

- **A** Area of Semicircle *(Square Meter)*
- A_{Circle} Area of Circle of Semicircle *(Square Meter)*
- **D** Diameter of Semicircle *(Meter)*
- l_{Arc} Arc Length of Semicircle *(Meter)*
- **P** Perimeter of Semicircle *(Meter)*
- **r** Radius of Semicircle *(Meter)*

Constants, Functions, Measurements used

- Constant: **pi**, 3.14159265358979323846264338327950288
  Archimedes' constant
- Function: **sqrt**, sqrt(Number)
  Square root function
- Measurement: **Length** in Meter (m)
  Length Unit Conversion
- Measurement: **Area** in Square Meter (m²)
  Area Unit Conversion

Check other formula lists

- Annulus Formulas
- Antiparallelogram Formulas
- Arrow Hexagon Formulas
- Astroid Formulas
- Bulge Formulas
- Cardioid Formulas
- Circular Arc Quadrangle Formulas
- Concave Pentagon Formulas
- Concave Quadrilateral Formulas
- Concave Regular Hexagon Formulas
- Concave Regular Pentagon Formulas
- Crossed Rectangle Formulas
- Cut Rectangle Formulas
- Cyclic Quadrilateral Formulas
- Cycloid Formulas
- Decagon Formulas
- Dodecagon Formulas
- Double Cycloid Formulas
- Fourstar Formulas
- Frame Formulas
- Golden Rectangle Formulas
- Grid Formulas
- H Shape Formulas
- Half Yin-Yang Formulas
- Heart Shape Formulas
- Hendecagon Formulas
- Heptagon Formulas
- Hexadecagon Formulas
- Hexagon Formulas
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- House Shape Formulas
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- Rectangle Formulas

- Rectangular Hexagon Formulas
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