



## Mathematical Signs and Commonly Used Abbreviations


[illegible]

**Example 1:** Find the area  $A$  and circumference  $C$  of a circle with a diameter of  $\frac{1}{2}$  inch.

$d = 0.75$  in.  $r = 0.375$  in.  $C = 2\pi r = 2.356$  in.  $A = 0.471$  in.<sup>2</sup>

**Example 2:** Find the area  $A$  and circumference  $C$  of a circle with a diameter of  $\frac{1}{4}$  inch.

$d = 0.25$  in.  $r = 0.125$  in.  $C = 0.785$  in.  $A = 0.049$  in.<sup>2</sup>



**Example 3:** Find the area  $A$  and circumference  $C$  of a circle with a diameter of  $\frac{1}{2}$  inch.

$d = 0.75$  in.  $r = 0.375$  in.  $C = 2.356$  in.  $A = 0.471$  in.<sup>2</sup>

**Example 4:** Find the area  $A$  and circumference  $C$  of a circle with a diameter of  $\frac{1}{4}$  inch.

$d = 0.25$  in.  $r = 0.125$  in.  $C = 0.785$  in.  $A = 0.049$  in.<sup>2</sup>

**Area of a Circle**

$A = \pi r^2 = \frac{\pi d^2}{4}$

**Circumference of a Circle**


$C = 2\pi r = \pi d$

**Example 1** The figure of a building roof is 200 millimeters. The main roof is inclined at 15° and the side roof is inclined at 30°. The main roof is 15° and the side roof is 30°. The main roof is 15° and the side roof is 30°.

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**Example 3** The figure of a building roof is 200 millimeters. The main roof is inclined at 15° and the side roof is inclined at 30°. The main roof is 15° and the side roof is 30°.

**Solution:** Volume =  $V = \frac{4\pi r^3}{3} = \frac{4\pi}{3} = 4(1.107)^3 = 6.93 \text{ m}^3$   
 Surface area =  $A = 4\pi r^2 = 4\pi = 15.4645 \text{ m}^2 = 3.1416 \pi$   
 $r = \sqrt{\frac{AV}{4\pi}} = 0.623 \text{ m}^3$



**Example:** Find the volume and surface area of a sphere of 4.5 cm radius, if given,

$V = 0.5236 \text{ m}^3 = 0.5236 \text{ m}^3 \times 10^6 \text{ m}^3/\text{m}^3 = 523.6 \text{ m}^3$ ,  $A = 3.1416 \text{ m}^2$   
 $A = 3.1416 \pi = 3.1416 \times 6.25 = 3.1416 \times 6.25 = 123.72 \text{ cm}^2$

**Example:** The volume of a sphere is 64 cubic centimeters. Find its surface.

$V = 64 \text{ cm}^3$ ,  $A = 64 \text{ cm}^2$ ,  $r = 2.1076 \text{ cm}$

<p>A circular slide rule with multiple scales. The outermost scale is degrees (0 to 360). Inside are scales for minutes (0 to 60) and seconds (0 to 60). Further in are scales for trigonometric functions: sin, cos, tan, cot, sec, csc. The center has a scale for 10^x and 10^-x. The rule is used for calculations by aligning values on different scales.</p>	<p><b>A = 1 mm</b>  <b>Bar 30</b>  <b>B = 30 mm</b>  <b>Bar 90</b></p>				
<p>As an arc is compared to a chord by a circular segment larger than an angle subtended by a chord in a circle, the segment less than the arc and the circle is an entire right-angle point from which to separate.</p>	<p>As an arc is compared to a chord by a circular segment larger than an angle subtended by a chord in a circle, the segment less than the arc and the circle is an entire right-angle point from which to separate.</p>	<p>If two chords intersect each other in a circle, then the rectangle of the segments of the one equals the rectangle of the segments of the other:</p> $a \cdot b = c \cdot d$	<p>If from a point outside a circle two lines are drawn, one of which intersects the circle and the other is tangent to it, then the rectangle contained by the two tangents to the intersecting line, and the part of a secant or a secant power an outside power are proportionally equal to the square of the tangent:</p> $d^2 = a \cdot b$	<p>If a triangle is inscribed in a circle, the angle opposite the diameter is a right angle. The angle opposite the diameter is a right angle to the opposite side.</p> <p>All angles of the periphery of a circle, subtended by the diameter, are right-angled angles.</p>	<p>The lengths of chords and arcs of the same circle are proportional to the corresponding angles of the circle:</p> $A : B = a : b$