

DIAMETER OF A CIRCLE

What is the diameter of a circle?

The **diameter** of a circle is a line segment that passes through the center of a circle connecting one side of the circle to the other.

The **radius** of the circle is half of the diameter. It is a line segment that goes from the center of the circle to the side of the circle. If two radii are drawn from the center of the circle, the angle made between them is called a **central angle**.

A **chord** is a line segment that goes from one side of the circle to the other side of the circle, but does not pass through the center.

The **circumference** is the distance around the circle, it is measured in terms of the diameter and the formula is $C = \pi \cdot d$, where π is **3.14** and d is the diameter.

How to use



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- If the radius of the circle is known, the circumference can be found. The diameter is twice the radius. If the radius is 5, the diameter is 10, and the circumference is $C = \pi \cdot d = 3.14 \cdot 10 = 31.4$.
- If the diameter of the circle is known, the circumference can also be found using the formula $C = \pi \cdot d$. Sometimes the exact circumference is not needed and instead of π being 3.14, π can be estimated to be 3.

Example:

Estimate the circumference if $d = 5 \rightarrow C = \pi \cdot d \rightarrow C = 3 \cdot 5 = 15$

- When finding circumference, π should be evaluated as given in the problem. If the circumference is given, the diameter can be found by filling in the circumference and then dividing by π . If given the circumference and the radius is needed, find the diameter and then divide by 2 to get the radius.

Try this!

1. Find the radius:

$$d = 20$$

$$d = 36$$

$$d = 44$$

2. Find the circumference:

$$d = 10$$



PREVIEW

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3. Find the diameter:

$$C = 6.28 \text{ units}$$

$$C = 18.84 \text{ units}$$