

What is the distance of the number 4 from 0?

Ans: 4 hops or 4 units

What is the distance of the number - 4 from 0?

Ans: 4 hops or 4 units

Both 4 and - 4, though two VERY DIFFERENT numbers, have something in common. They are both 4 units away from 0.

To show this we write $|4| = |-4|$

Both of these equals 4 units ie

$$|4| = 4 \text{ units}$$

$$|-4| = 4 \text{ units}$$

The distance of a number from 0, irrespective of which side of 0 it is on, is called its **MODULUS**. So we say modulus -4 = modulus 4

$$\text{We write } |-4| = 4$$

The modulus value of a number is called its **ABSOLUTE VALUE**.

So can say the absolute value of - 4 is 4.

The difference between two quantities can be expressed in two ways

- a number
- a percentage

We just saw how we find the difference as a **NUMBER**: we subtract.
Now let us see how we find increase or decrease as a **PERCENTAGE**.

INCREASE: we find out how much it has **GROWN BY** relative to how much it **ORIGINALLY WAS** and express that as a percentage

e.g. My shoe - size has grown by : 1
It originally was : 4

$$\frac{1}{4} \times 100 = 25\%$$

My shoe size has grown by 25%

Do these, using the examples on W-1:

1. The price of the car has increased by : _____
It originally was : _____

$$\frac{\boxed{}}{\boxed{}} \times 100 = \boxed{} \%$$

The price of the car has increased by _____%

2. The population of the village has decreased by : _____
It originally was : _____

$$\frac{\boxed{}}{\boxed{}} \times 100 = \boxed{} \%$$

The population of the village has decreased by _____%

The distance between the CENTRE and any point on the CIRCUMFERENCE has a special name as well. It is called the RADIUS of the circle. On the previous page we saw that the radius of the circle with centre O was 1.5 cm.

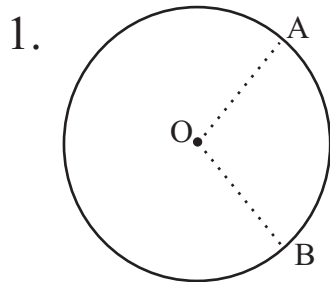
Radius $\overline{OA} = 1.5 \text{ cm}$

\overline{OB} is also a radius and so is \overline{OM} . There are an infinite number of them. The plural of radius is RADII (pronounced Ray - d - eye).

REMEMBER:

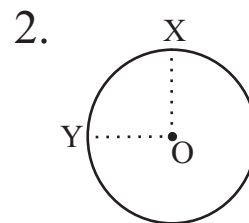
- * There are an infinite number of radii in a circle.
- * In a circle, all the radii have the same length.

Measure the radii of these circle.



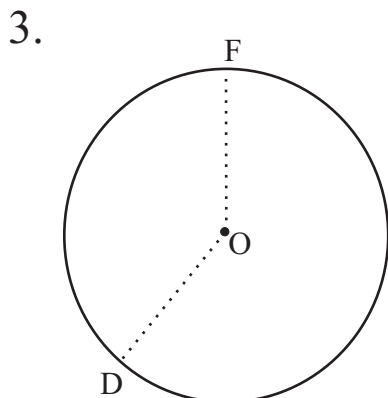
$\overline{OA} =$

$\overline{OB} =$



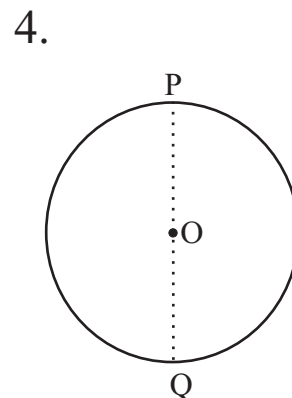
$\overline{OX} =$

$\overline{OY} =$



$\overline{OD} =$

$\overline{OF} =$



$\overline{OP} =$

$\overline{OQ} =$