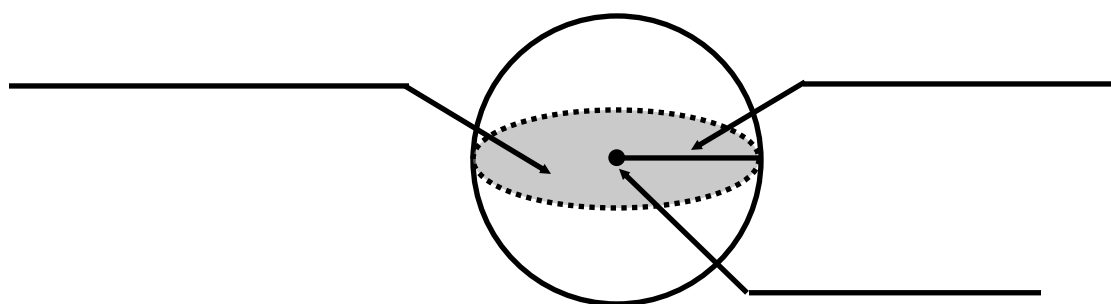# TOPIC 18-1: SURFACE AREA & VOLUME OF SPHERES

A **SPHERE** is the set of all points in space that are a given distance, the
_____, from a given point, the _____.

A cross section of a sphere that has the same radius and center as the
sphere is called a _____ _____.

When asked to find the "circumference" of a sphere, you are to calculate
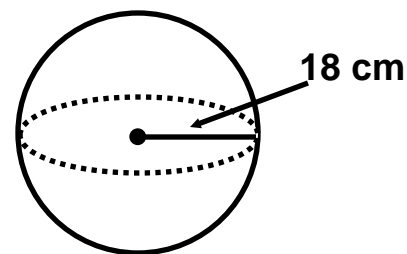the circumference of any _____ _____of that sphere.

- -

Surface Area:

Volume:

- -

EXAMPLE 1: Find the EXACT Surface Area of a sphere with a radius of
4 cm.

Surface Area = _____

EXAMPLE 2: Find the EXACT Volume of the sphere below.

18 cm

V = _____

- -

EXAMPLE 3: A sphere has a diameter of 12 cm. Find its Surface Area and Volume to the nearest thousandth.

SA = _____

V = _____

- -

EXAMPLE 4: If a sphere has a volume of $\frac{4000\pi}{3}$ cubic units. Find its EXACT Surface Area.

SA = _____

EXAMPLE 5: If a sphere has a Surface Area of 36π square units, find its EXACT Volume.

V = _____

- -
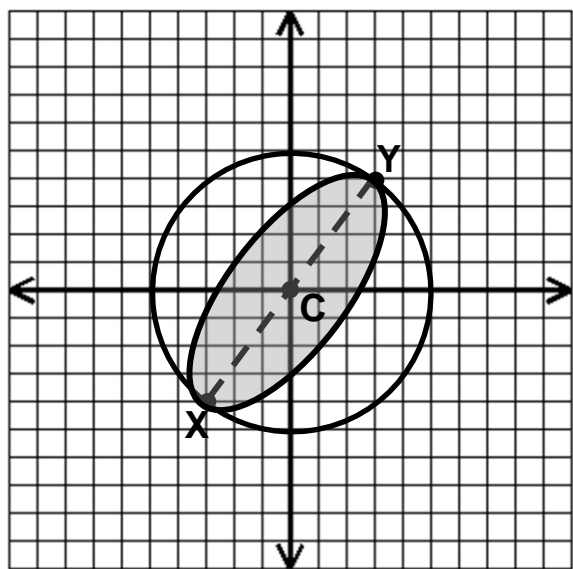
EXAMPLE 6: If the great circle of a sphere has a circumference of 36π units. Find the Surface Area and Volume of the sphere to the nearest thousandth.

SA = _____

V = _____

EXAMPLE 7: Use the sphere graphed in the coordinate plane below to answer the questions below.

A) What is the EXACT Surface Area of the sphere?

B) What is the EXACT Volume of the sphere?

C) What is the equation of the line containing the radius of the great circle shown?