

Geometry

9.6 part 1: SA of spheres

Name: _____

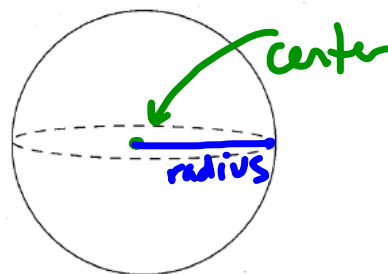
🎯 Students will be able to find the surface area of spheres.

☆Sphere:

set of all points in space that are the same distance from a point (center)

☆Hemispheres:

Half of a sphere



Surface Area of a Sphere:

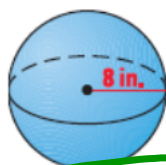
r = radius

$S =$

$$SA = 4\pi r^2$$

Example 1: Find the surface area of the sphere. Round your answer to the nearest whole number.

a.



$$r = 8 \text{ in}$$

$$SA = 4\pi r^2$$

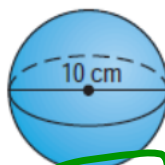
$$SA = 4\pi (8)^2$$

$$SA = 4\pi (64)$$

$$SA = 256\pi$$

$$SA \approx 804 \text{ in}^2$$

b.



$$r = 5$$

$$SA = 4\pi r^2$$

$$SA = 4\pi (5)^2$$

$$SA = 100\pi$$

$$SA \approx 314 \text{ cm}^2$$

TRY:

C.



This is now
a hemisphere

$$r = 11 \text{ in}$$

$$SA = \frac{1}{2}(4\pi r^2) + (\pi r^2)$$

$$SA = \frac{1}{2}(4\pi(11)^2) + (\pi(11)^2)$$

$$SA = \frac{1}{2}(4\pi(121)) + (\pi \cdot 121)$$

$$SA = \frac{1}{2}(484\pi) + 121\pi$$

Homework: on the back!

$$SA = 242\pi + 121\pi$$

$$SA = 363\pi$$

$$SA \approx 1140 \text{ in}^2$$