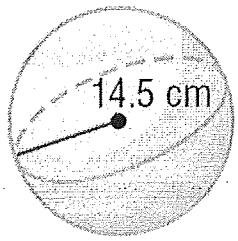
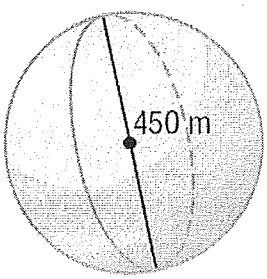
Basic Surface Area and Volume of Spheres Homework

Directions: Find the surface area and volume of each solid. Round to the nearest tenth, if necessary.

1. 

SA = _____

V = _____

2. 

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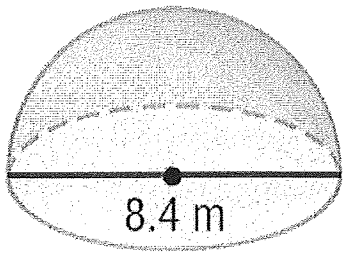
3. 

SA = _____

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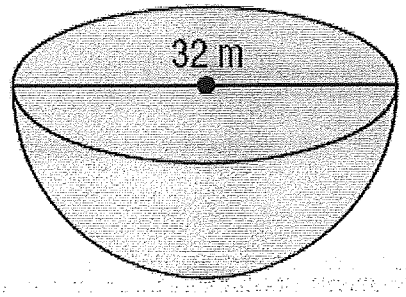

SA = _____

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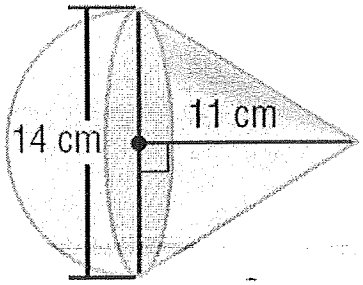

SA = _____

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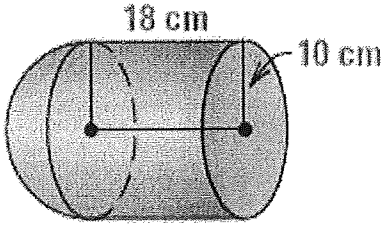

SA = _____

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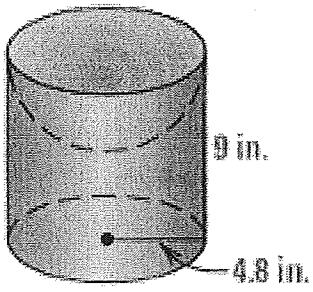
7.



SA = _____

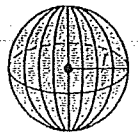
V = _____

NAME _____ DATE _____ PERIOD ____

12-6 Study Guide and Intervention *(continued)*

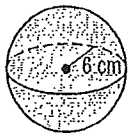
Surface Areas of Spheres

Surface Areas of Spheres You can think of the surface area of a sphere as the total area of all of the nonoverlapping strips it would take to cover the sphere. If r is the radius of the sphere, then the area of a great circle of the sphere is πr^2. The total surface area of the sphere is four times the area of a great circle.



Surface Area of a Sphere	If a sphere has a surface area of T square units and a radius of r units, then $T = 4\pi r^2$.

Example **Find the surface area of a sphere to the nearest tenth if the radius of the sphere is 6 centimeters.**



$T = 4\pi r^2$ Surface area of a sphere

$= 4\pi \cdot 6^2$ $r = 6$

≈ 452.4 Simplify.

The surface area is 452.4 square centimeters.

Exercises

Find the surface area of each sphere with the given radius or diameter to the nearest tenth.

1. $r = 8$ cm

2. $r = 2\sqrt{2}$ ft

3. $r = \pi$ cm

4. $d = 10$ in.

5. $d = 6\pi$ m

6. $d = 16$ yd

7. Find the surface area of a hemisphere with radius 12 centimeters.

8. Find the surface area of a hemisphere with diameter π centimeters.

9. Find the radius of a sphere if the surface area of a hemisphere is 192π square centimeters.

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Practice

Surface Area ~~and Volume~~ of Spheres

Find the surface area ~~and volume~~ of each sphere described below. Round to the nearest tenth.

1. The diameter is 100 centimeters.

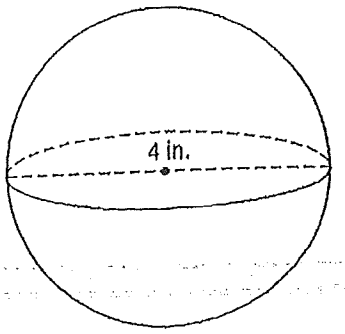
2. A great circle has a circumference 83.92 meters.

3. The radius is 12 inches long.

4. A great circle has an area of 70.58 square feet.

Find the surface area and volume of each solid. Round to the nearest tenth.

5.



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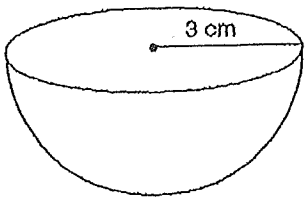

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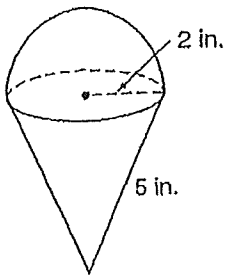

8.