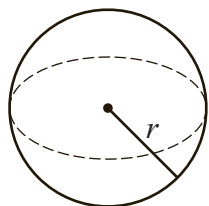
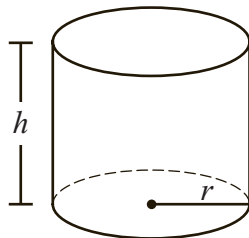


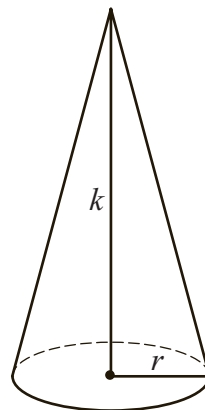
Three objects are shown below: a sphere, a right circular cylinder, and a right circular cone.



**Sphere**



**Cylinder**



**Cone**

The radius,  $r$ , of each of the objects is 10 inches.

- a. What is the volume, in cubic inches, of the sphere? Show or explain how you got your answer.

The height,  $h$ , of the cylinder is 2 times its radius.

- b. What is the volume, in cubic inches, of the cylinder? Show or explain how you got your answer.

The volume of the cone is equal to the volume of the cylinder.

- c. What is the value of  $k$ , the height in inches of the cone? Show or explain how you got your answer.

The radius of the sphere will be changed so that the volume of the sphere will be equal to the volume of the cylinder.

- d. By how many inches would the radius of the sphere have to change for its volume to be equal to the volume of the cylinder? Show or explain how you got your answer.