

3.35 Spherical Cap

Radius of sphere: R

Radius of base: r

Height: h

Area of plane face: S_B

Area of spherical cap: S_C

Total surface area: S

Volume: V

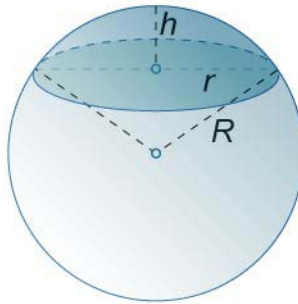


Figure 52.

342.
$$R = \frac{r^2 + h^2}{2h}$$

343.
$$S_B = \pi r^2$$

344.
$$S_C = \pi(h^2 + r^2)$$

345.
$$S = S_B + S_C = \pi(h^2 + 2r^2) = \pi(2Rh + r^2)$$

346.
$$V = \frac{\pi}{6}h^2(3R - h) = \frac{\pi}{6}h(3r^2 + h^2)$$