Spherical Distance

$$y = \frac{\alpha}{\rho}.r$$

Area of Spherical Lune

$$F_a = 2.r^2.\hat{\alpha}$$

Volume of Spherical Wedge

$$V_a = \frac{2}{3}.\hat{\alpha}.r^3$$

Area of Spherical Cap

$$F_{SC} = 2.\pi.r.h$$

Volume of Spherical Cap

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

Area of Spherical Segment

$$F = 2.\pi.r.h$$

Volume of Spherical Segment

$$V = \frac{\pi}{6}.h.(3r_1^2 + 3r_2^2 + h^2)$$

Area of spherical triangle

$$F_{ABC} = \frac{\varepsilon}{\rho}.r^2$$

Radius of parallel

$$r' = r\ cos\varphi$$

Specifications of Spherical Triangles

1) $180^o < A + B + C < 540^o$
$0^o < a + b + c < 360^o$

2) $a + b > c$ $\quad$ $c - a < b$
$b + c > a$ $\quad or \quad$ $a - b < c$
$a + c > b$ $\quad$ $b - c < a$

3) $A + B < 180^o + C$
$B + C < 180^o + A$
$C + A < 180^o + B$

4) $If\ b = c\ then\ B = C$
or
$If\ B = C\ then\ b = c$

5) $If\ b > c\ then\ B > C$
or
$If\ B > C\ then\ b > c$

6) $If\ a + b = 180^o\ then\ A + B = 180^o$
$If\ a + b > 180^o\ then\ A + B > 180^o$
$If\ a + b < 180^o\ then\ A + B < 180^o$
or
$If\ A + B = 180^o\ then\ a + b = 180^o$
$If\ A + B > 180^o\ then\ a + b > 180^o$
$If\ A + B < 180^o\ then\ a + b < 180^o$

7) $-90^o < \frac{-A+B+C}{2} < 90^o$
$-90^o < \frac{A-B+C}{2} < 90^o$
$-90^o < \frac{A+B-C}{2} < 90^o$

The area of equilateral triangle in plane

$$\mathrm{F} = \mathrm{a}^2 \frac{\sqrt{3}}{4}$$