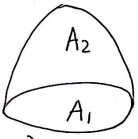
Example 1 : Circular base, hemisphere above it



$N = 2$ $\quad F3 = 2^2 = 4$

F_{11} $\quad F_{12}$

$A_2 = \frac{4\pi R^2}{2} = \frac{4\pi (D/2)^2}{2} = \frac{\pi D^2}{2}$

F_{21} $\quad F_{22}$

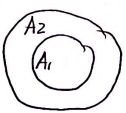
$F_{11} = 0$ plane surface $\quad \sum F_{ij} = 1.0 \quad F_{11}^{\nearrow 0} + F_{12} = 1$

$F_{12} = 1$

By Reciprocity law $\Rightarrow A_1 F_{12} = A_2 F_{21}$

$$F_{21} = A_1/A_2 \, F_{12} = \frac{\pi D^2/4}{\pi D^2/2} \times 1 = 0.5 \qquad F_{21} + F_{22} = 1 \Rightarrow F_{22} = 0.5$$

Example 2 : view factors for the enclosure formed by two spheres



F_{11} $\quad F_{12}$ $\quad F_{11} = 0$ convex surface

F_{21} $\quad F_{22}$ $\quad F_{11} + F_{12} = 1.0 \Rightarrow F_{12} = 1.0$

Reciprocity Law $\Rightarrow A_1 F_{12} = A_2 F_{21} \Rightarrow F_{21} = \frac{A_1}{A_2} F_{12}$

$$F_{21} = \frac{\pi D_1^2}{\pi D_2^2} \times 1 = \left(\frac{D_1}{D_2}\right)^2$$

$$F_{21} + F_{22} = 1.0 \Rightarrow F_{22} = 1 - \left(\frac{D_1}{D_2}\right)^2$$