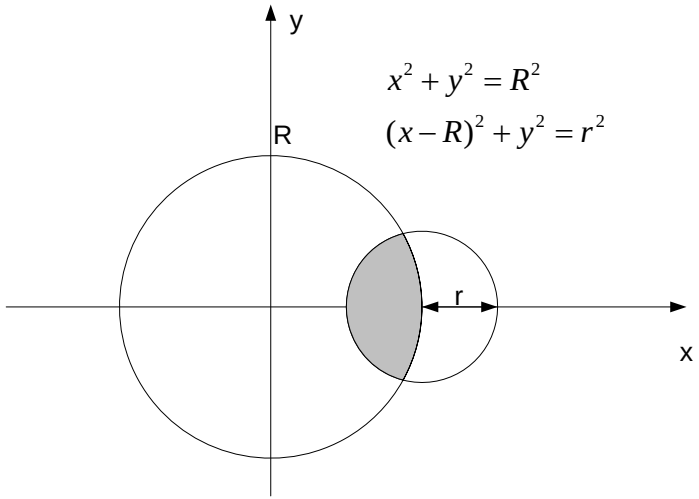
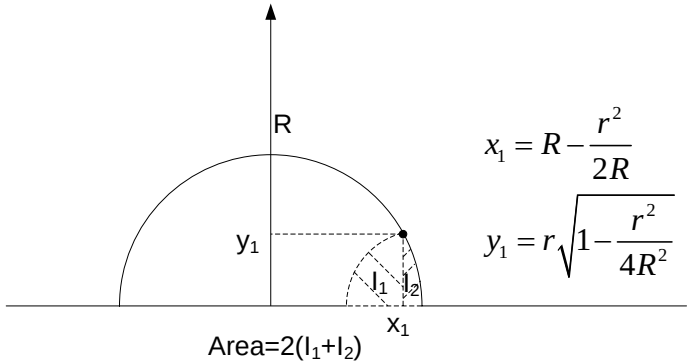



$$x^2 + y^2 = R^2$$

$$(x-R)^2 + y^2 = r^2$$




$$x_1 = R - \frac{r^2}{2R}$$

$$y_1 = r\sqrt{1 - \frac{r^2}{4R^2}}$$

Area=2($I_1$+$I_2$)

$$I_1 = \int_{R-r}^{R-\frac{r^2}{2R}} dx \int_0^{\sqrt{r^2-(x-R)^2}} dy = \int_{R-r}^{R-\frac{r^2}{2R}} \sqrt{r^2-(x-R)^2}\,dx$$

$$I_2 = \int_{R-\frac{r^2}{2R}}^{R} dx \int_0^{\sqrt{R^2-x^2}} dy = \int_{R-\frac{r^2}{2R}}^{R} \sqrt{R^2-x^2}\,dx$$