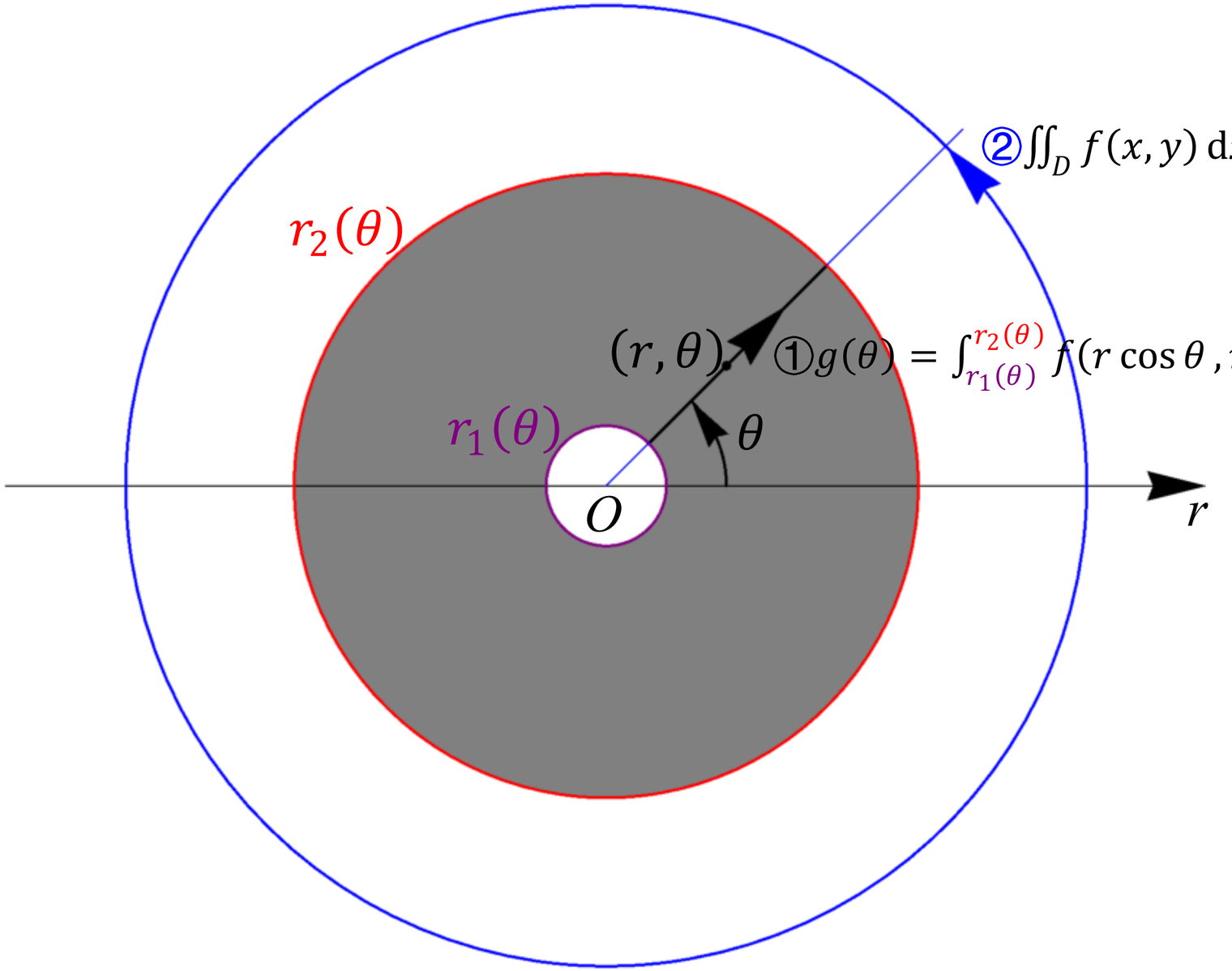

$$②\iint_D f(x,y)\,\mathrm{d}x\mathrm{d}y = \int_0^{2\pi} g(\theta)\,\mathrm{d}\theta = \int_0^{2\pi} \mathrm{d}\theta\, g(\theta)$$

$$= \int_0^{2\pi} \mathrm{d}\theta \int_{r_1(\theta)}^{r_2(\theta)} f(r\cos\theta, r\sin\theta) r\,\mathrm{d}r$$

$$①g(\theta) = \int_{r_1(\theta)}^{r_2(\theta)} f(r\cos\theta, r\sin\theta) r\,\mathrm{d}r$$