Panjang Busur / Kurva

$$S = \int_{x_1}^{x_2} \sqrt{1 + \left(\frac{dy}{dx}\right)^2}\, dx \quad \text{atau} \quad S = \int_{y_1}^{y_2} \sqrt{1 + \left(\frac{dx}{dy}\right)^2}\, dy$$

Luas Permukaan Kulit Benda Putar

- Diputar thdp sb. x

$$k = 2\pi \int_{x_1}^{x_2} y \sqrt{1 + \left(\frac{dy}{dx}\right)^2}\, dx$$

- Diputar thdp sb. y

$$k = 2\pi \int_{y_1}^{y_2} x \sqrt{1 + \left(\frac{dx}{dy}\right)^2}\, dy$$

Volume Benda Putar

$$V = \int_{x_1}^{x_2} L(x)\, dx \quad \text{atau} \quad V = \int_{y_1}^{y_2} L(y)\, dy$$

* Metode Cakram

$$V = \int_{x_1}^{x_2} \pi y^2\, dx \quad \text{atau} \quad V = \int_{y_1}^{y_2} \pi x^2\, dy$$

* Metode Cincin Cakram

$$V = \int_{x_1}^{x_2} 2\pi x\, y(x)\, dx \quad \text{atau} \quad V = \int_{y_1}^{y_2} 2\pi y\, x(y)\, dy$$

TB. Luas (Bidang Datar)

$$\bar{x} = \frac{\int_{x_1}^{x_2} x(y_1 - y_2)\,dx}{\int_{x_1}^{x_2} (y_1 - y_2)\,dx} \qquad \bar{y} = \frac{1}{2}\frac{\int_{x_1}^{x_2} (y_1^2 - y_2^2)\,dx}{\int_{x_1}^{x_2} (y_1 - y_2)\,dx}$$

TB. Volum Benda Putar

- diputar thdp sb-x $(\bar{x}, 0)$

$$\bar{x} = \frac{\int_{x_1}^{x_2} xy^2\,dx}{\int_{x_1}^{x_2} y^2\,dx}$$

- diputar thdp sb-y $(0, \bar{y})$

$$\bar{y} = \frac{\int_{y_1}^{y_2} yx^2\,dy}{\int_{y_1}^{y_2} x^2\,dy}$$

TB. Kulit Benda Putar

$$\bar{x} = \frac{\int_{x_1}^{x_2} xy\sqrt{1 + f(x)^2}\,dx}{\int_{x_1}^{x_2} y\sqrt{1 + f(x)^2}\,dx}$$

TB. Busur

$$\bar{x} = \frac{\int_{x_1}^{x_2} x\sqrt{1+\left(\frac{dy}{dx}\right)^2}\,dx}{\int_{x_1}^{x_2} \sqrt{1+\left(\frac{dy}{dx}\right)^2}\,dx}$$

$$\bar{y} = \frac{\int_{x_1}^{x_2} y\sqrt{1+\left(\frac{dy}{dx}\right)^2}\,dx}{\int_{x_1}^{x_2} \sqrt{1+\left(\frac{dy}{dx}\right)^2}\,dx}$$