

Integral set ups, 1-30

$$\#1 \quad V = \pi \int_1^2 (2 - \frac{1}{2}x)^2 dx \quad \#2 \quad \int_{-1}^1 \pi (1-x^2)^2 dx$$

$$\#3 \quad \int_1^2 \pi (\frac{1}{x})^2 dx \quad \#4 \quad \int_2^4 \pi (\sqrt{25-x^2})^2 dx$$

$$\#5 \quad \int_0^9 \pi (2\sqrt{y})^2 dy \quad \#6 \quad \int_1^2 \pi (e^y)^2 dy$$

$$\#7 \quad \int_0^1 \pi (x^2 - (x^3)^2) dx$$

~~$$\int_{-2}^2 \pi (5-x^2)^2 - \pi (\frac{1}{4}x^2)^2 dx$$~~

$$\#8 \quad \int_{-2}^2 \pi (5-x^2)^2 - \pi (\frac{1}{4}x^2)^2 dx$$

$$\#9 \quad \int_0^2 \pi ((2y)^2 - (y^2)^2) dy \quad \#10 \quad \int_0^1 \pi (2^2 - (2\sqrt{y})^2) dy$$

$$\#11 \quad \pi \int_0^1 (1-x)^2 - (1-\sqrt{x})^2 dx \quad \#12 \quad \int_0^2 \pi [(2-e^{-x})^2 - (2-1)^2] dx$$

$$\#13 \quad \pi \int_{-\pi/3}^{\pi/3} (2^2 - \sec^2(x)) dx \quad \#14 \quad \int_1^3 \pi \left[\left(\frac{1}{x} - t(1) \right)^2 - (0 - -1)^2 \right] dx$$

$$\#15 \quad \int_{-1}^1 \pi (1-y^2)^2 dy \quad \#16 \quad \int_0^1 \pi [(2-y^2)^2 - (2-y)^2] dy$$

$$\#17 \quad \pi \int_0^1 [(\sqrt{y}+1)^2 - (y^2+1)^2] dy$$

#18 (Sum two volumes)

$$\pi \int_0^2 (3^2 - 1^2) dy + \pi \int_2^4 (3^2 - (y-1)^2) dy$$

$$\#19 \quad \pi \int_0^1 x^6 dx$$

$$\#21 \quad \int_0^1 \pi (1 - \sqrt[3]{y})^2 dy$$

$$\#23 \quad \pi \int_0^1 [1^2 - (1-x^3)^2] dx$$

$$\#25 \quad \pi \int_0^1 [1^2 - (1-y^2)^2] dy$$

$$\#27 \quad \pi \int_0^1 (\sqrt{x})^2 - (x^2)^2 dx$$

$$\#29 \quad \pi \int_0^1 (1-y^2)^2 - (1-\sqrt[3]{y})^2 dy$$