

$$\#2 \quad \frac{3\pi}{4}$$

$$\#8 \quad \frac{\pi}{2}$$

$$\#16 \quad V = 4 \int_0^{\pi/2} \int_1^3 dr d\theta$$

$$\#20 \quad 4\pi$$

$$\#22 \quad \frac{32}{9} + \frac{8\pi}{3}$$

$$\#24 \quad \frac{9\pi}{2}$$

$$\#28 \quad \pi(1 - e^{-4})$$

$$\#30 \quad \frac{\pi}{4} \sin 1$$

$$\#36 \quad \text{False}$$

$$\#38 \quad \text{False}$$

$$\#42 \quad \varphi a^2 - \frac{1}{2} a^2 \sin 2\varphi$$