

# Volume of Cylinders - HW Key

$$\begin{aligned} \textcircled{1} \quad V &= \pi r^2 h \\ V &= \pi \cdot 6^2 \cdot 8 \\ V &\approx 904.779 \\ V &\approx 904.8 \text{ m}^3 \end{aligned}$$

Radius is 5 in.

$$\begin{aligned} \textcircled{3} \quad V &= \frac{1}{2} \pi r^2 h \\ V &= \frac{1}{2} \cdot \pi \cdot 5^2 \cdot 12 \\ V &= 150\pi \text{ in}^3 \end{aligned}$$

↑  
leave  $\pi$  in your answer

$$\begin{aligned} \textcircled{5} \quad \text{Radius is } \frac{4.9}{2} &= 2.45 \\ V &= \pi r^2 h \\ V &= \pi (2.45)^2 (9.2) \\ V &\approx 173.488 \\ V &\approx 173.5 \text{ cm}^3 \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad V_{\text{total}} &= V_{\text{rect}} + V_{\text{c}} \\ V &= lwh + \pi r^2 h \\ V &= 14 \cdot 8 \cdot 12 + \pi \cdot 4^2 \cdot 8 \\ V &= 1344 + 402.123 \\ V &\approx 1,746.1 \text{ ft}^3 \end{aligned}$$

$$\textcircled{2} \quad \text{Radius is 10 in}$$

$$\begin{aligned} V &= \pi r^2 h \\ V &= \pi \cdot 10^2 \cdot 10 \\ V &\approx 3141.59 \\ V &\approx 3,141.6 \text{ in}^3 \end{aligned}$$

$$\textcircled{4} \quad \text{Radius is 11 cm}$$

$$\begin{aligned} V &= \pi r^2 h \\ V &= \pi \cdot 11^2 \cdot 7 \\ V &= 847\pi \text{ cm}^3 \end{aligned}$$

$$\textcircled{6} \quad \text{Radius is } \frac{24.2}{2} = 12.1$$

$$\begin{aligned} V &= \pi r^2 h \\ V &= \pi (12.1)^2 (27.6) \\ V &\approx 12694.912 \\ V &\approx 12,694.9 \text{ in}^3 \end{aligned}$$

$$\textcircled{8} \quad V_{\text{total}} = V_{\text{B}} - V_{\text{b}}$$

$$\begin{aligned} V &= \pi r^2 h - \pi r^2 h \\ V &= \pi \cdot 6^2 \cdot 22 - \pi \cdot 2^2 \cdot 22 \end{aligned}$$

Radius is 6cm

$$V = 792\pi - 88\pi$$

like terms

$$V = 704\pi \text{ cm}^3$$