$P_b = 36\sqrt{3}$

← pole przekroju

$P_b = 2\pi r H$

$36\sqrt{3} = 2\pi r H \;/:2$

$18\sqrt{3} = \pi r H$

$\downarrow \quad \frac{H}{2r} = tg\,60°$

$\frac{H}{2r} = \sqrt{3} \;/\cdot 2r$

$H = 2\sqrt{3}\,r$

wstawiamy ←

$18\sqrt{3} = \pi r \cdot 2\sqrt{3} r \;/:\sqrt{3}$

$18 = 2\pi r^2 \;/:2$

$9 = \pi r^2$ (pole podstawy)

$r^2 = \frac{9}{\pi}$ to $r = \sqrt{\frac{9}{\pi}} = \frac{3}{\sqrt{\pi}} = \frac{3\sqrt{\pi}}{\pi}$

wstawiamy za r ↑

$H = 2\sqrt{3} \cdot \frac{3\sqrt{\pi}}{\pi}$

$H = \frac{6\sqrt{3\pi}}{\pi}$

Czyli: $r = \frac{3\sqrt{\pi}}{\pi}$, $H = \frac{6\sqrt{3\pi}}{\pi}$

$V = \pi r^2 \cdot H$

$V = 9 \cdot \frac{6\sqrt{3\pi}}{\pi} = \frac{54\sqrt{3\pi}}{\pi}$