

1. Površina kružnog valjka je $180\pi \text{ cm}^2$, a razlika visine i poluprečnika osnove je 3 cm. Izračunati zapreminu valjka.

$$P=180\pi$$

$$H-r=3 \rightarrow H=r+3$$

$$V=?$$

$$P=2\pi r \cdot (r+H)$$

$$H=r+3$$

$$180\pi = 2\pi r \cdot (r+r+3)$$

$$H=6+3$$

$$180 = 2r \cdot (2r+3)$$

$$H=9$$

$$90 = 2r^2 + 3 \cdot r$$

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

$$2 \cdot r^2 + 3 \cdot r - 90 = 0$$

$$V=36 \cdot 9 \cdot \pi$$

$$r_1 = \frac{-3+27}{4}$$

$$r_2 = \frac{-3-27}{4}$$

$$V=324\pi$$

$$r_1 = 6$$

$$r_2 = \frac{30}{4} \quad r > 0$$