

1. Data je površina zarubljene kupe $P=216\pi \text{ dm}^2$; razlika poluprečnika osnova je 5 dm i izvodnica 13 dm. Naći zapreminu zarubljene kupe.

$$P=216\pi$$

$$R-r=5 \rightarrow R=r+5$$

$$s=13$$

$$V=?$$

$$P=\pi \cdot (R^2+r^2+s \cdot (R+r))$$

$$H^2 = s^2 - (R - r)^2$$

$$216\pi = \pi((r+5)^2 + r^2 + 13(r+5) + 13r)$$

$$H = \sqrt{144}$$

$$216 = r^2 + 10r + 25 + r^2 + 13r + 65 + 13r$$

$$H=12$$

$$2r^2 + 36r - 126 = 0$$

$$V = \frac{\pi}{3} H (r_2 + R^2 + Rr)$$

$$r^2 + 18r - 63 = 0$$

$$V = 4\pi(64 + 24 + 9)$$

$$r_1 = \frac{-18+24}{2}$$

$$r_2 = \frac{-18-24}{2}$$

$$V=388\pi$$

$$r_1=3$$

$$r_2=-21 \quad r>0$$

$$R=r+5$$

$$R=8$$