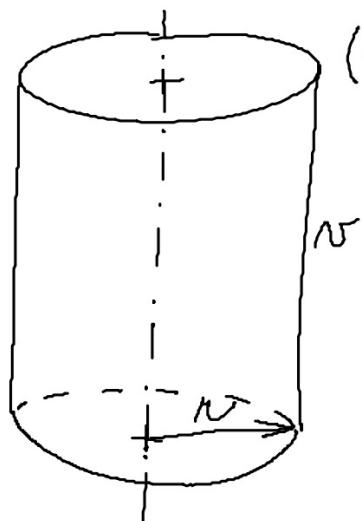
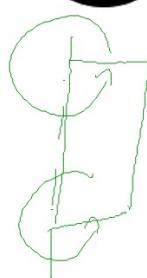
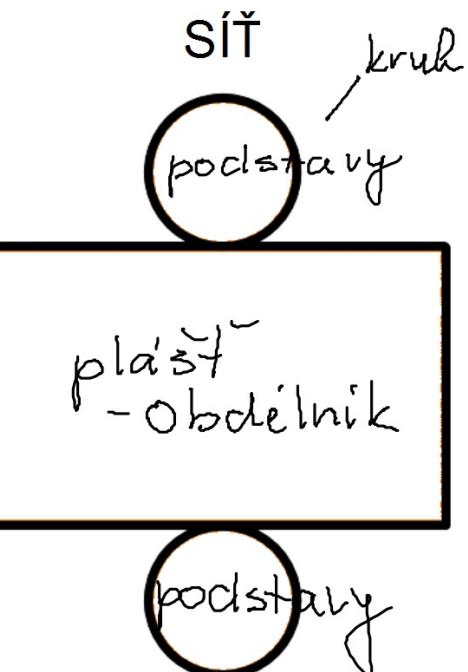


VÁLEC



(tvar elipsy)

-rotacioní těleso - kolem osy
"rotuje" obdélník



OBJEM

- "vyplnění" tělesa

$$V = S_p \cdot v \quad \text{— výška tělesa}$$

obsah podstavy

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

$$\begin{aligned} & [cm^3] \\ & [\text{dm}^3 = l] \end{aligned}$$

POVRCH

- sečtení obsahu všech stěn

→ vytvořit síť

$$S_{\square} = a \cdot b$$

$$b = \pi r$$

A diagram of a cylinder. The top face is a circle labeled S_p . The bottom face is also a circle labeled S_p . A vertical rectangle representing the side surface is labeled $S_{pl} = 2\pi r \cdot a$. A horizontal arrow points from the center of the top circle down to the center of the bottom circle, labeled "obvod kruhu".

$$S_{pl} = 2\pi r \cdot a$$

$$a = 2\pi r$$



S_{pl} - obsah pláště



$$S_p = \pi r^2$$

$$S = 2 \cdot S_p + S_{pl}$$

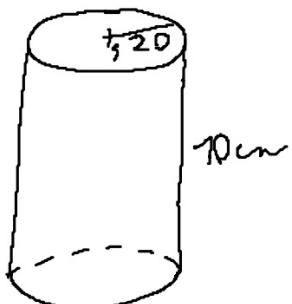
$$S = 2 \cdot \pi r^2 + 2\pi r \cdot n$$

$$S = 2\pi r(r + n)$$

Vypočítejte povrch a objem válce, jestliže platí:

a) $r = 2 \text{ dm}$, $v = 10 \text{ cm}$

a)



$$S = 2 \cdot \pi \cdot r \cdot (r + v)$$

$$S = 2 \cdot \pi \cdot 20 \cdot (20 + 10)$$

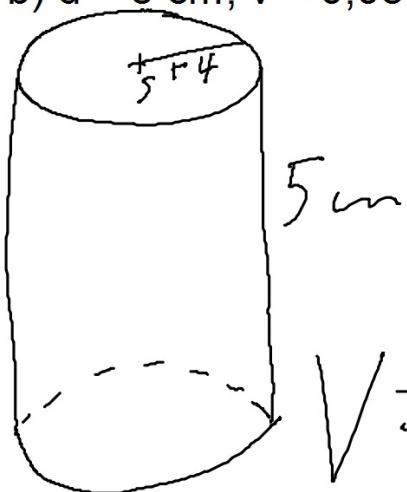
$$\underline{\underline{S = 3769,91 \text{ cm}^2}}$$

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

$$V = \pi \cdot 20^2 \cdot 10$$

$$\underline{\underline{V = 12566,37 \text{ cm}^3}}$$

b) $d = 8 \text{ cm}, v = 0,05 \text{ m}$



$$S = 2 \cdot \pi \cdot r(t+v)$$

$$S = 2 \cdot \pi \cdot 4(4+5)$$

$$\underline{S = 226,19 \text{ m}^2}$$

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

$$V = \pi \cdot 4^2 \cdot 5$$

$$\underline{V = 251,33 \text{ m}^3}$$

$$\frac{V = \pi \cdot r^2 \cdot n}{n = \frac{V}{\pi r^2}} \quad | : \pi r^2$$

$$V = \pi r^2 \cdot n \quad | : \pi n$$

$$r^2 = \frac{V}{\pi \cdot n}$$

$$r = \sqrt{\frac{V}{\pi \cdot n}}$$

$$V : \pi r^2 = n$$

$$n = \frac{V}{\pi r^2}$$

$$S = 2\pi r(r + n) \quad | : 2\pi r$$

$$r + n = \frac{S}{2\pi r} \quad | - r$$

$$n = \frac{S}{2\pi r} - r$$

$$S = 2\pi r^2 + 2\pi r n \quad | - 2\pi r^2$$

$$2\pi r n = S - 2\pi r^2 \quad | : 2\pi r$$

$$n = \frac{S - 2\pi r^2}{2\pi r} \quad \frac{S}{2\pi r} - \frac{2\pi r^2}{2\pi r}$$