Přehled vzorců pro objemy a povrchy těles

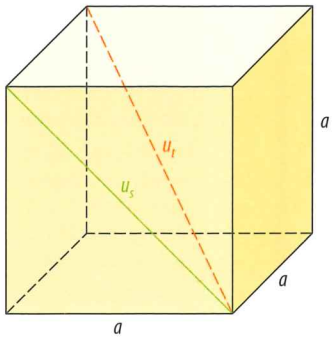
KRYCHLE

Povrch:
$S = 6 \cdot a^2$

Objem:
$V = a^3$

Stěnová úhlopříčka:
$u_s = a\sqrt{2}$

Tělesová úhlopříčka:
$u_t = a\sqrt{3}$

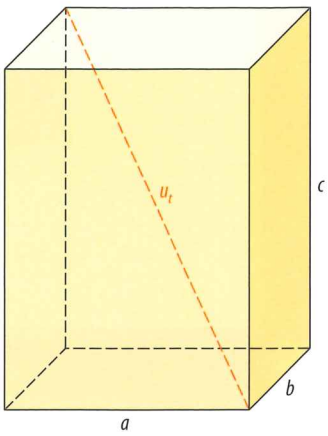


KVÁDR

Povrch:
$S = 2 \cdot (ab + ac + bc)$

Objem:
$V = a \cdot b \cdot c$

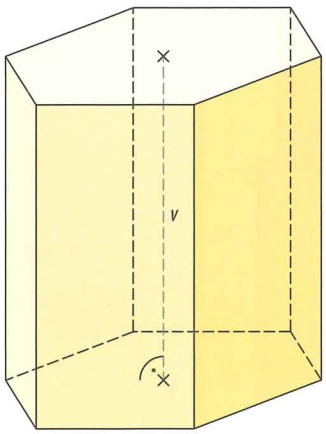
Tělesová úhlopříčka:
$u_t = \sqrt{a^2 + b^2 + c^2}$



HRANOL

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

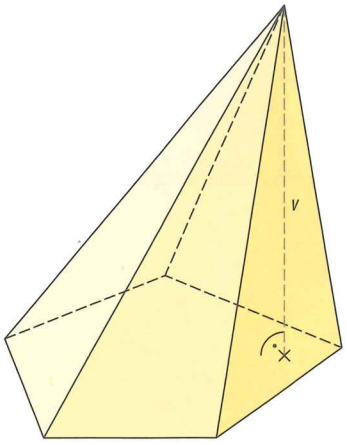
Objem:
$V = S_p \cdot v$



JEHLAN

Povrch:
$S = S_p + S_{pl}$

Objem:
$V = \frac{1}{3} \cdot S_p \cdot v$



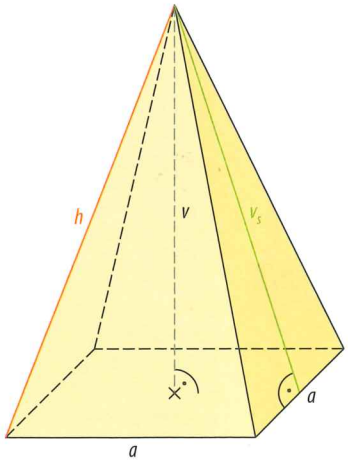
PRAVIDELNÝ ČTYŘBOKÝ JEHLAN

Povrch:
$S = a^2 + a\sqrt{4v^2 + a^2}$

Objem:
$V = \frac{1}{3} \cdot a^2 \cdot v$

Výška boční stěny:
$v_s = \sqrt{v^2 + \frac{a^2}{4}}$

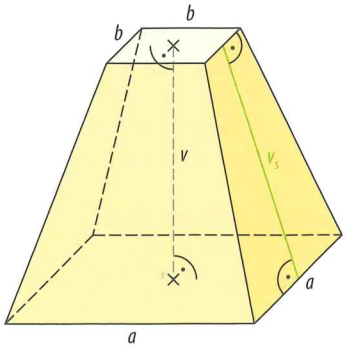
Délka boční hrany:
$h = \sqrt{v^2 + \frac{a^2}{2}}$



PRAVIDELNÝ ČTYŘBOKÝ KOMOLÝ JEHLAN

Povrch:
$S = a^2 + b^2 + 2 \cdot (a + b) \cdot v_s$

Objem:
$V = \frac{1}{3} \cdot v \cdot (a^2 + ab + b^2)$



PRAVIDELNÝ ČTYŘSTĚN

Povrch:

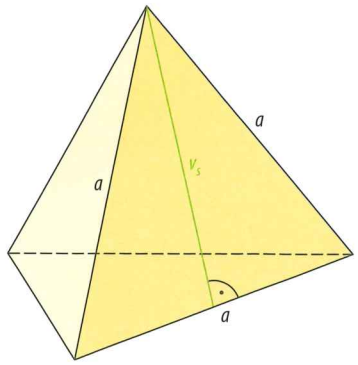
$S = a^2 \cdot \sqrt{3}$

Objem:

$V = a^3 \cdot \frac{\sqrt{2}}{12}$

Výška boční stěny:

$v_s = a \cdot \frac{\sqrt{3}}{2}$



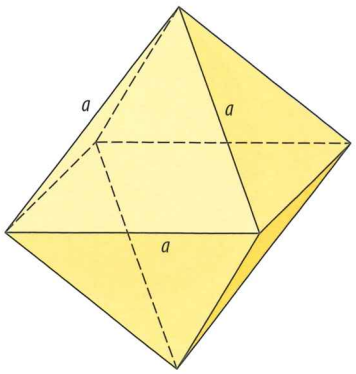
PRAVIDELNÝ OSMISTĚN

Povrch:

$S = 2a^2 \cdot \sqrt{3}$

Objem:

$V = a^3 \cdot \frac{\sqrt{2}}{3}$



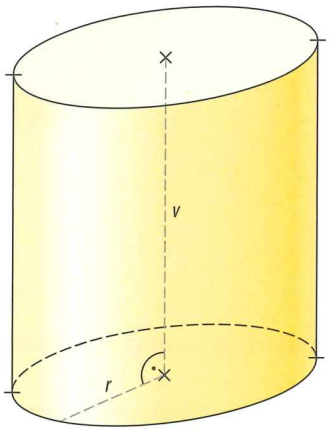
VÁLEC

Povrch:

$S = 2\pi r^2 + 2\pi rv$

Objem:

$V = \pi r^2 v$



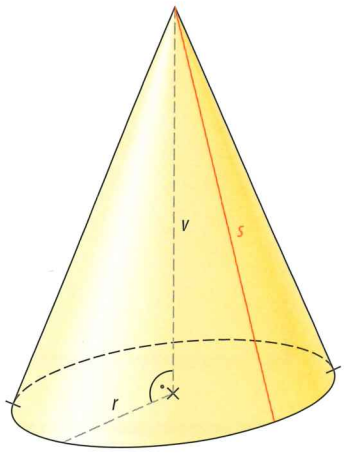
KUŽEL

Povrch:

$S = \pi r^2 + \pi rs$

Objem:

$V = \frac{1}{3} \cdot \pi r^2 \cdot v$



KOMOLÝ KUŽEL

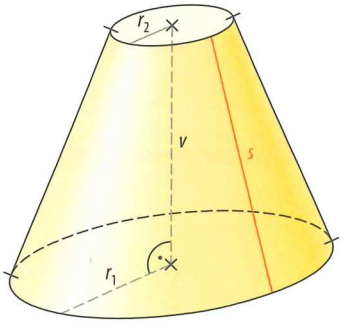
Povrch:

$S = S_1 + S_2 + S_{pl}$

$S = \pi r_1^2 + \pi r_2^2 + \pi s \cdot (r_1 + r_2)$

Objem:

$V = \frac{\pi v}{3} \cdot (r_1^2 + r_1 r_2 + r_2^2)$



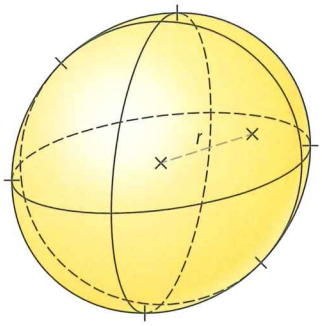
KOULE

Povrch:

$S = 4\pi r^2$

Objem:

$V = \frac{4}{3}\pi r^3$



KULOVÁ ÚSEČ

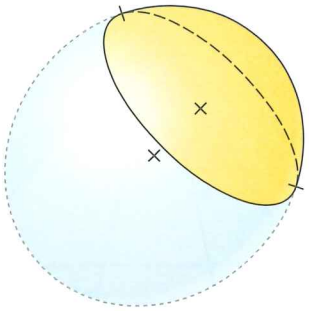
Povrch:

$S = 2\pi r v + \pi \rho^2$

Objem:

$V = \frac{1}{3}\pi v^2 (3r - v)$

$V = \frac{\pi v}{6}\left(3\rho^2 + v^2\right)$



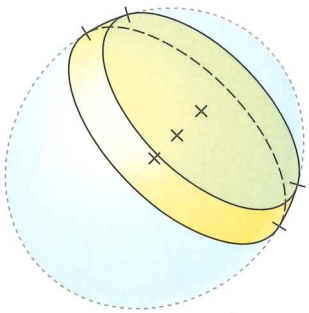
KULOVÁ VRSTVA

Povrch:

$S = 2\pi r v + \pi \rho_1^{\,2} + \pi \rho_2^{\,2}$

Objem:

$V = \frac{1}{6}\pi v\left(3\rho_1^{\,2} + 3\rho_2^{\,2} + v^2\right)$



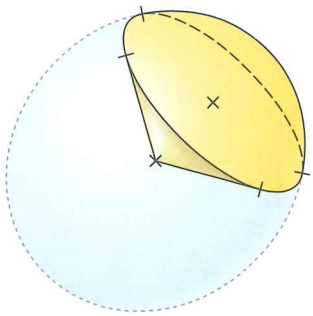
KULOVÁ VÝSEČ

Povrch:

$S = 2\pi r v + \pi \rho r$

Objem:

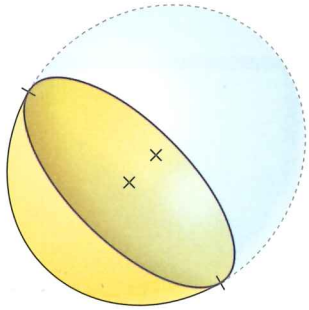
$V = \frac{2}{3}\pi r^2 v$



KULOVÝ VRCHLÍK

Obsah:

$S = 2\pi r v$



KULOVÝ PÁS

Obsah:

$S = 2\pi r v$