Geometry

IN REAL LIFE

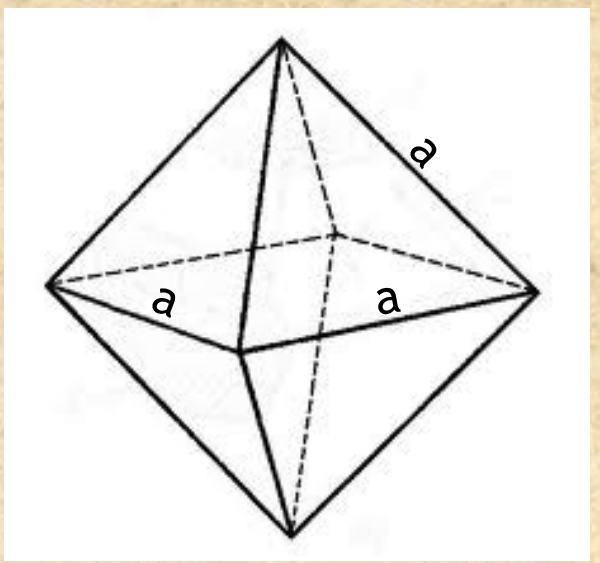
Geometry is applied in most of spheres of our lives:

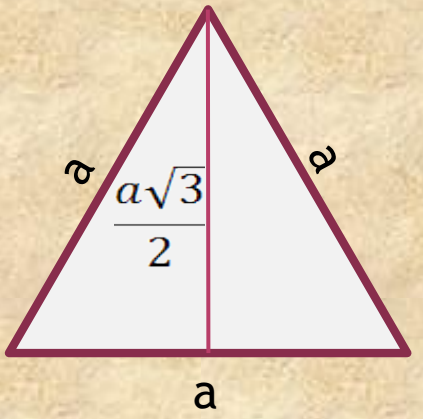
- Buildings (pyramids, scyscrapers, conventional houses, etc.)

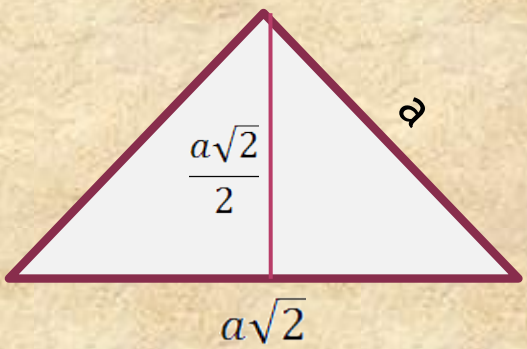
- Nature (leafs, flowers…)

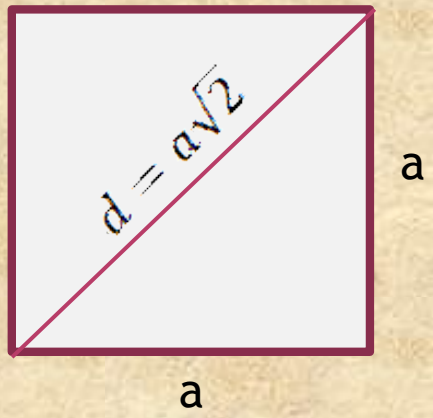
- Minerals

Fluorite - octahedron

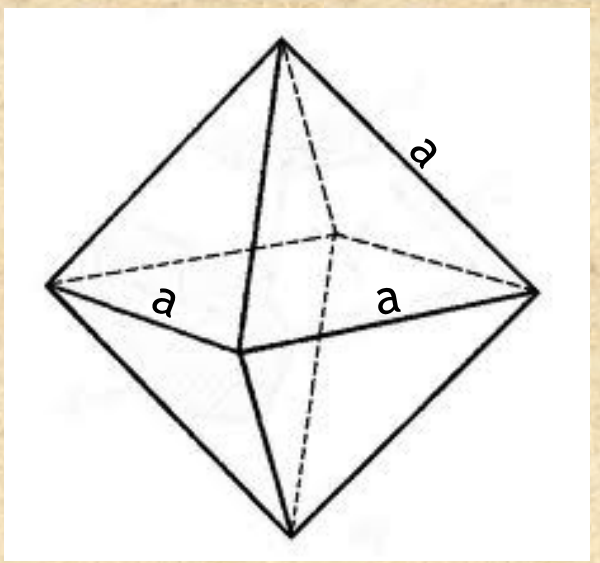








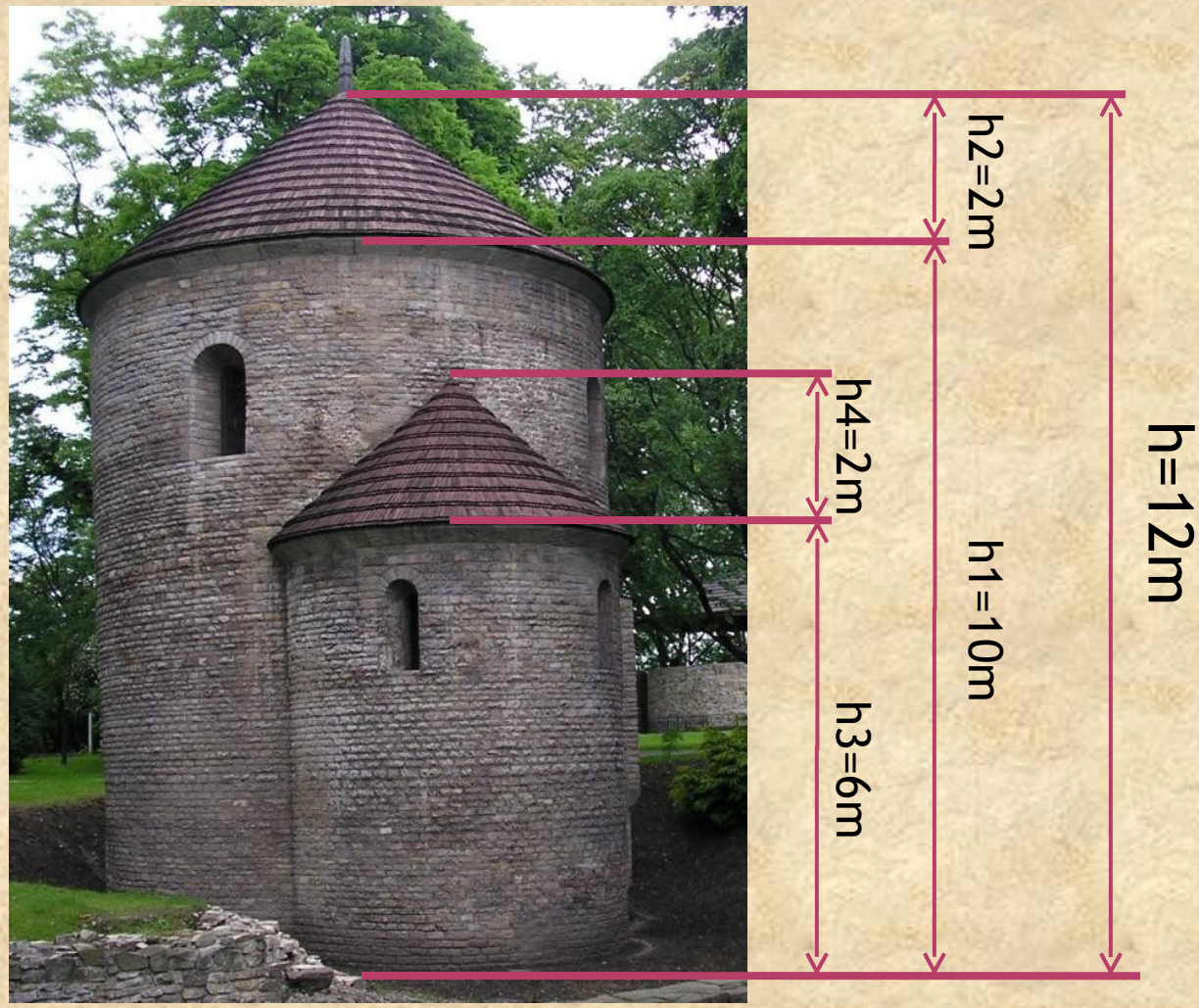
Fluorite - octahedron



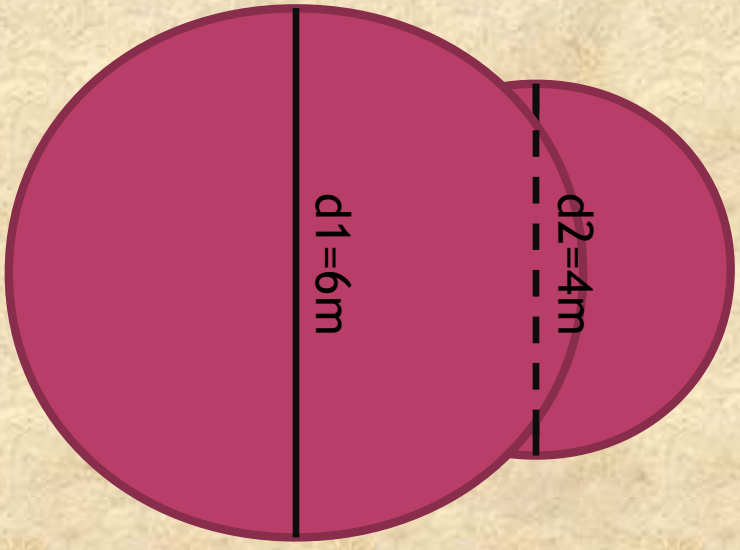
$$\text{Tsa} = \frac{a^2\sqrt{3}}{4} * 8 = 2a^2\sqrt{3}$$

$$V = 2\left(\frac{1}{3}a^2 * \frac{a\sqrt{2}}{2}\right) = 2\left(\frac{a^3\sqrt{2}}{6}\right) = \frac{a^3\sqrt{2}}{3}$$

rOTUNDa in cieszyn



rOTUNDa in cieszyn



rOTUNDa in cieszyn

D1=2R1 D2=2R2 Π=3,14

V1=R12*H1*Π =90m3 Π
V2=R12*H2*Π/3 =6m3 Π
V3=R22*H3*Π =24m3 Π
V4=R22*H4*Π/3 =2,6m3 Π

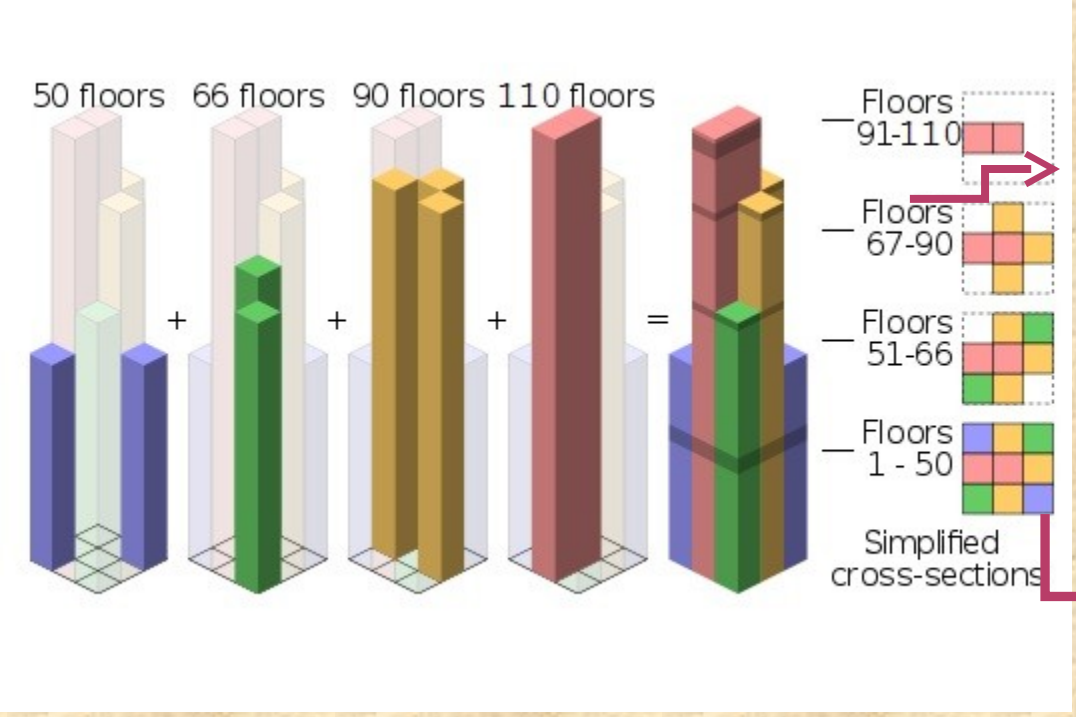
V=V1+V2+V3+V4
V=(90+6+24+2,6)Πm3
V=122,6Πm3
V=122,6m3 * 3,14

V=~385m3

Willis Tower (Sears Tower) - Chicago

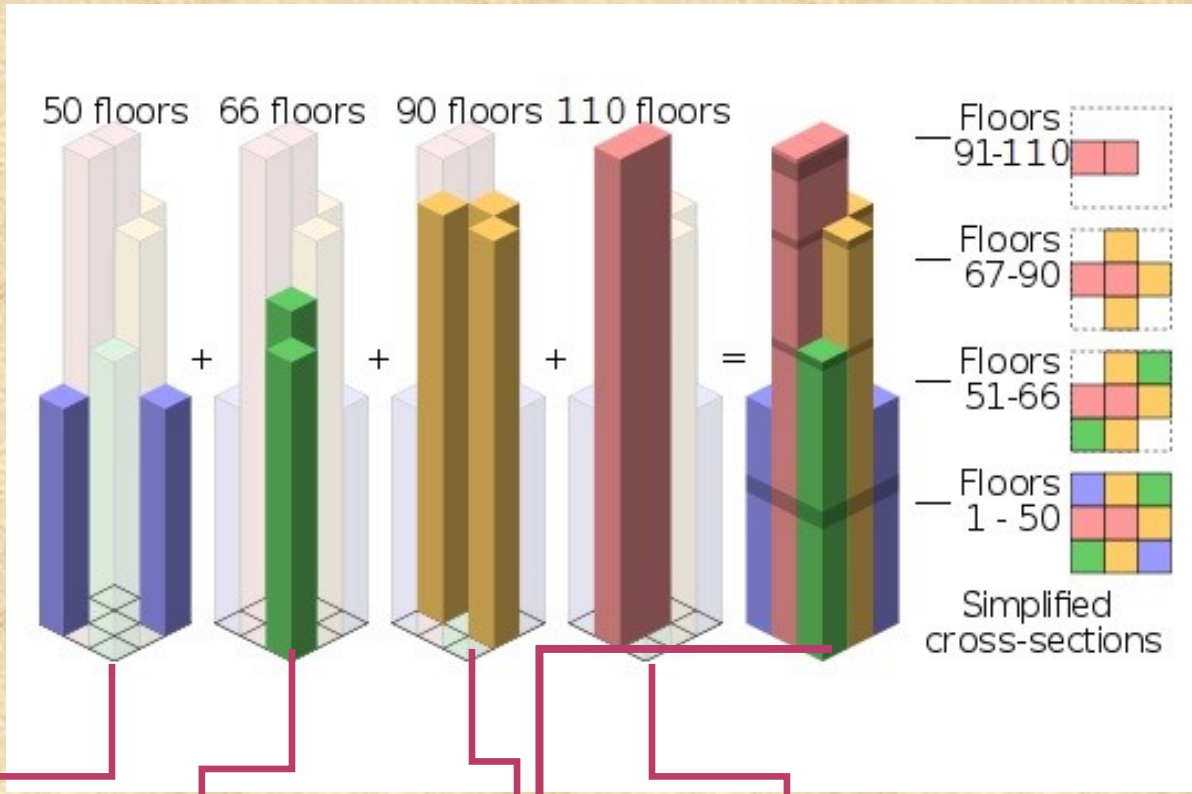
Structure of Willis Tower (Sears Tower)

Willis Tower is about 450m high.



1floor~4,1m
X=1floor

Base is divided into 9 parts(squares) each part is 75m wide and 75m long (b=75m x 75m=5625m2)



V=(2*(50x*b))+(2*(66x*b))+(3*(90x*b))+(2*(110x*b))

V=100xb+132xb+270xb+220xb

V=722xb

V=722*4,1m*5625m2

V=16 651 125m3

Curiosity

In Willis Tower work about 10 000 people.

Average person inhales 6l per minute

Volume of Willis Tower is amount **16 651 125 000l.**

If building is hermetic and all workers are inside building…

10 000 people inhales 60 000l per minute, so they will alive there

277519 minutes

↓

4625 hours

↓

192 days

↓

27 weeks

↓

0,5 years

Summary

Geometry is very intresting part of science. It is really useful in real life. For example when we want to build our new house.