Solids, czyli bryły

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2A

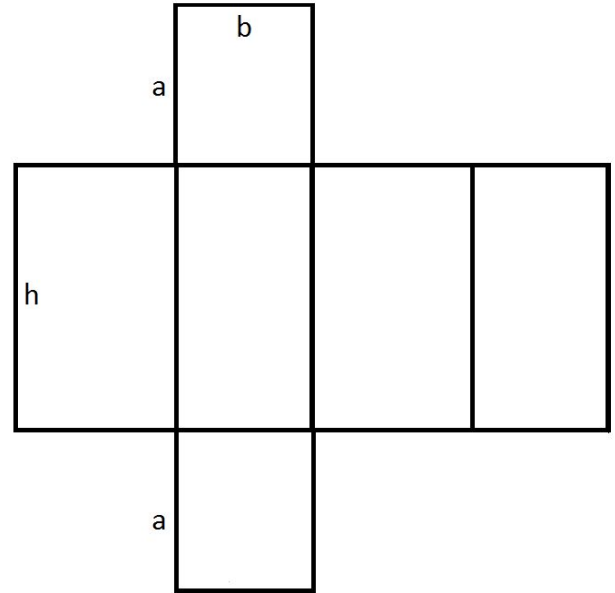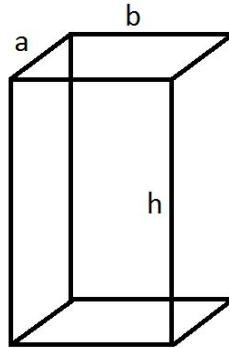# What is a Solid? 3-dimensional geometric object.

Sorts of solids:

- **Prism**: Cuboid, Cube, Regular Prism
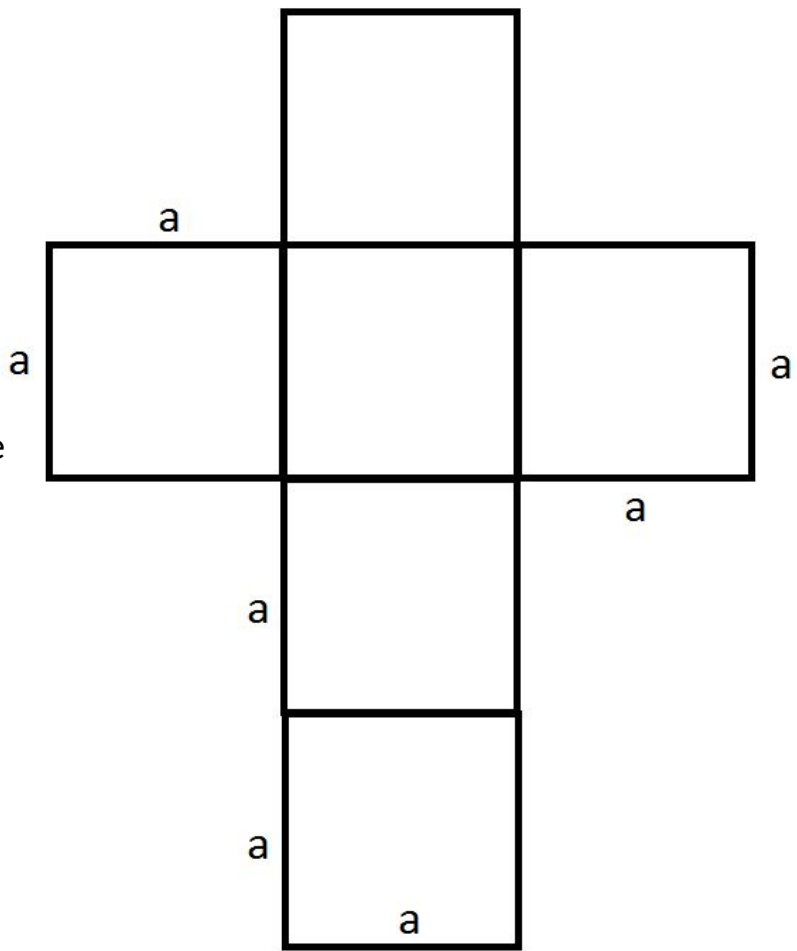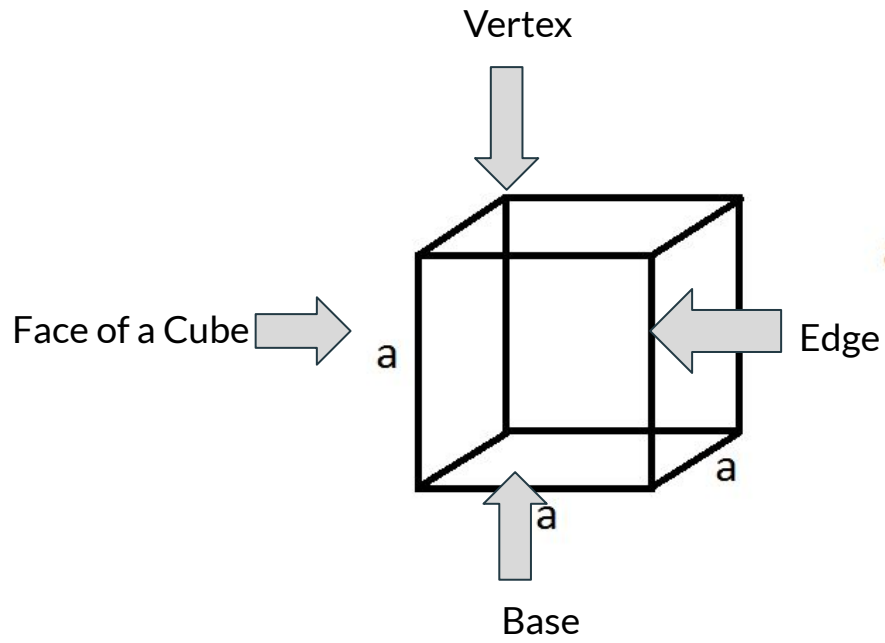- **Pyramid**: Regular Pyramid
- Cylinder
- Cone
- Sphere

Cuboid

- prism with rectangles as bases and faces
- the formula for the **volume** of cuboid **V=abh**
- the formula for the **area** of cuboid **P=2ab+2ah+2bh**
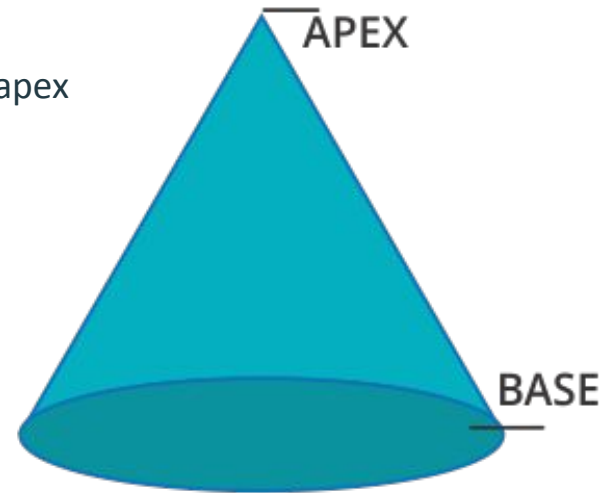- Examples: eraser, TVs, boxes

Cube

- cuboid with all edges equal
- the formula for the **volume** of a cube is **$V=a^3$**
- the formula for the **area** of a cube is **$P=6a^2$**
- Examples: Rubik's cube, boxes, build buildings

Vertex

Face of a Cube

Edge

Base

a

a

a

a

a

a

a

a

a

a

a

Cone

-figure without edges

-three dimensional figure with curved surface pointed towards the apex

- the formula for the **area** of the cone's base- **P=πr^2**

- the formula for the **area** of the cone's **lateral surface**- **P=πrl**

-Examples: ice cream waffle, road sign, funnel, birthday hats

Pyramid

- figure with one base, sides meet at the **apex**

- the formula for the **area** of pyramid- **P=Ps+Pb** (lateral surface + base)

- the formula for the **volume** of pyramid- **V=⅓Pb*H**

- Example: Egypt's Pyramid

Sphere

- a 3 dimensional object where every point on the surface is equidistant from the center
- the formula for the **volume** is **V= 4/3Πr^3**
- the formula for the **area** is **P=4Πr^2**
- Example: football ball, basketball ball

https://www.mathsisfun.com/definitions/sphere.html

Cylinder

- this object has two identical circular bases
- the formula for the **volume** of the Cylinder is- $V=\Pi r^2 h$
- the formula for the **area** of the Cylinder is- $P=2\Pi r^2 + 2\Pi rh$
- Example: cat food

Rotterdam, Netherlands   London, England

Exercises

1. The volume of the cube is 27 cm3. What is the sum of the lengths of all the edges of this cube? 36
2. What is the total area of a 5 × 3 × 4 cuboid? 94

Thank you for your attention

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