



Englische Übungen zu Berechnungen in Prismen und Pyramiden

1. Calculate **1)** the volume **2)** the surface and **3)** the length of the diagonal of a cuboid with given edges a , b and c .
 - a. $a = 9.0 \text{ cm}$, $b = 7.2 \text{ cm}$, $c = 4.8 \text{ cm}$
 - b. $a = b = 3.2 \text{ m}$, $c = 2.4 \text{ m}$
 - c. $a = b = c = 5.8 \text{ m}$

2. The base of a regular hexagonal prism has edges with length $a = 6.5 \text{ cm}$. The height of the prism is $h = 10.4 \text{ cm}$. Find **1)** the volume and **2)** the surface of the prism.

3. The main entrance to the Louvre museum in Paris has the shape of a regular square pyramid with side length $a = 35.42 \text{ m}$ and height $h = 21.65 \text{ m}$. Its lateral surface is made of glass. Compute the size of its lateral surface.





4. A regular hexagonal pyramid is given by its base edge and its height.
Find 1) the volume 2) the length of the lateral edge 3) the height of the lateral faces and 4) the surface of the pyramid.
- a. $a = 2.8 \text{ cm}, h = 4.5 \text{ cm}$
 - b. $a = 12 \text{ m}, h = 12.6 \text{ m}$
 - c. $a = 5.6 \text{ m}, h = 10.5 \text{ m}$

Vocabulary

Englisch	Deutsch
volume	Volumen, Rauminhalt
surface	Oberfläche
cuboid	Quader
diagonal of the cuboid	Raumdiagonale
edge	Kante
base	Grundfläche
regular	regelmäßig
hexagonal	sechsseitig, sechseckig
prism	Prisma
height	Höhe
pyramid	Pyramide
lateral edge	Seitenkante
lateral face	Seitenfläche
lateral surface	Mantelfläche





Solutions

1.

- a. $V = 311.04 \text{ cm}^3$, $O = 285.12 \text{ cm}^2$, $d \approx 12.49 \text{ cm}$ (12.4852 ...)
- b. $V = 24.576 \text{ m}^3$, $O = 51.2 \text{ m}^2$, $d \approx 5.12 \text{ m}$ (5.1224 ...)
- c. $V = 195.112 \text{ m}^3$, $O = 201.84 \text{ m}^2$, $d \approx 10.05 \text{ m}$ (10.0459 ...)

2. $O \approx 625.14 \text{ cm}^2$ (625.137 ...), $V \approx 1141.59 \text{ cm}^3$ (1141.594 ...)

3. $M \approx 1981.45 \text{ m}^2$ (1981.4526 ...)

4.

- a. $V \approx 30.55 \text{ cm}^3$, $s = 5.3 \text{ cm}$, $h_a \approx 5.11 \text{ cm}$, $O \approx 63.31 \text{ cm}^2$
- b. $V \approx 1571,32 \text{ m}^3$, $s = 17.4 \text{ m}$, $h_a \approx 16.33 \text{ m}$, $O \approx 962.10 \text{ cm}^2$
- c. $V \approx 285.16 \text{ m}^3$, $s = 11.9 \text{ m}$, $h_a \approx 11.57 \text{ m}$, $O \approx 275.78 \text{ m}^2$

