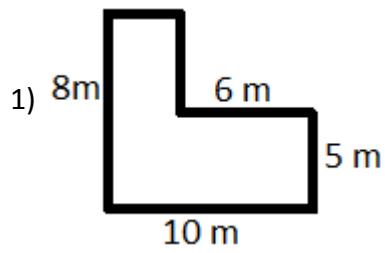
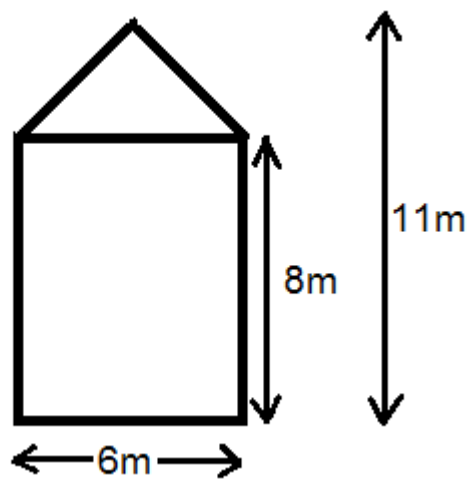


Aufgaben zu zusammengesetzten Flächen



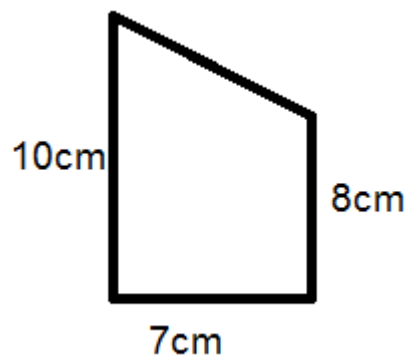
Fläche (A) und Umfang (U) gesucht

2)



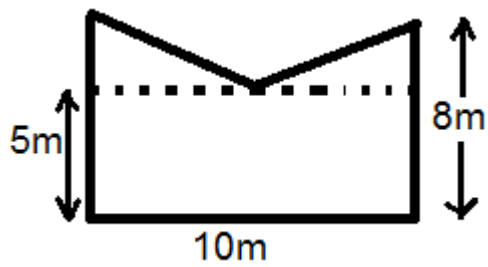
Fläche gesucht

3)



Fläche gesucht

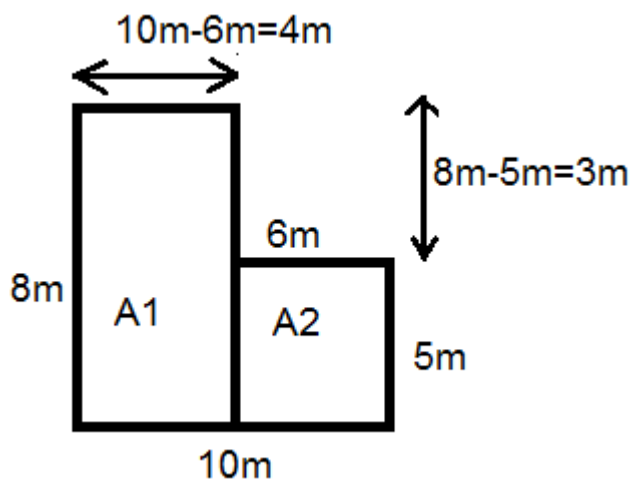
4)



Fläche gesucht

Lösung:

1)



Wir haben die Fläche in zwei Rechtecke aufgeteilt, deren Fläche wir berechnen können. Danach werden diese Rechteckflächen addiert.

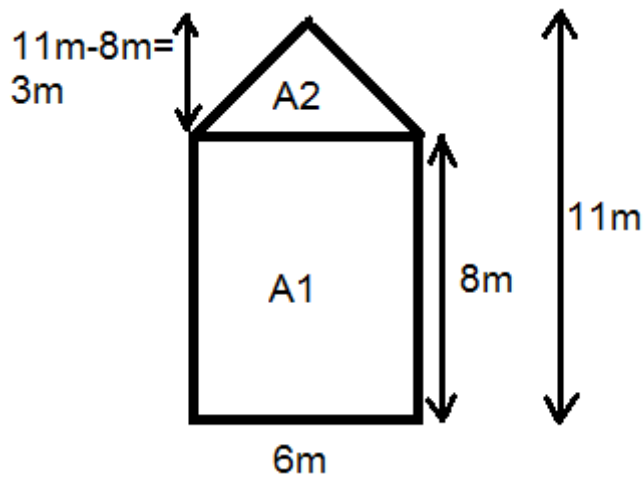
$$A_1 = 8\text{m} \cdot 4\text{m} = 32\text{m}^2$$

$$A_2 = 6\text{m} \cdot 5\text{m} = 30\text{m}^2$$

$$A = A_1 + A_2 = 62\text{m}^2$$

$$U = 5\text{m} + 6\text{m} + 3\text{m} + 4\text{m} + 8\text{m} + 10\text{m} = 36\text{m}$$

2)

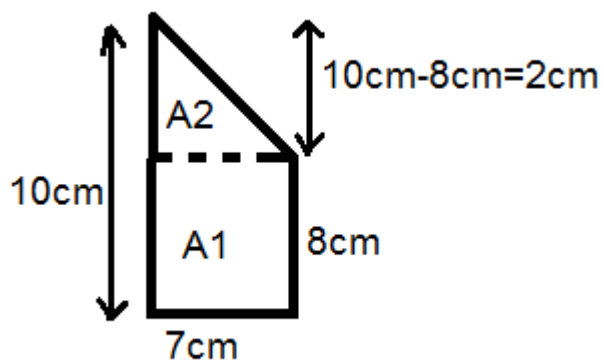


$$A_1 = 6\text{m} \cdot 8\text{m} = 48\text{m}^2$$

$$A_2 = \frac{1}{2} \cdot 6\text{m} \cdot 3\text{m} = 9\text{m}^2$$

$$A = A_1 + A_2 = 57\text{m}^2$$

3)

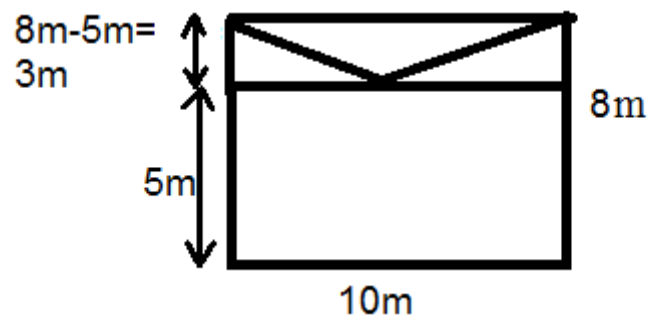


$$A_1 = 7\text{cm} \cdot 8\text{cm} = 56\text{cm}^2$$

$$A_2 = \frac{1}{2} \cdot 7\text{cm} \cdot 2\text{cm} = 7\text{cm}^2$$

$$A = A_1 + A_2 = 63\text{cm}^2$$

4)



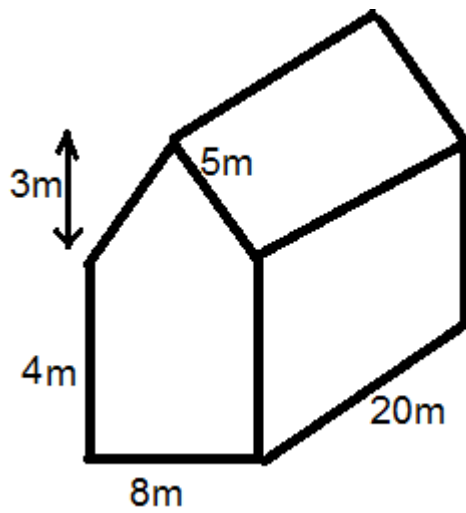
$$A_{\square} = 10\text{m} \cdot 8\text{m} = 80\text{m}^2$$

$$A_{\triangle} = \frac{1}{2} \cdot 10\text{m} \cdot 3\text{m} = 15\text{m}^2$$

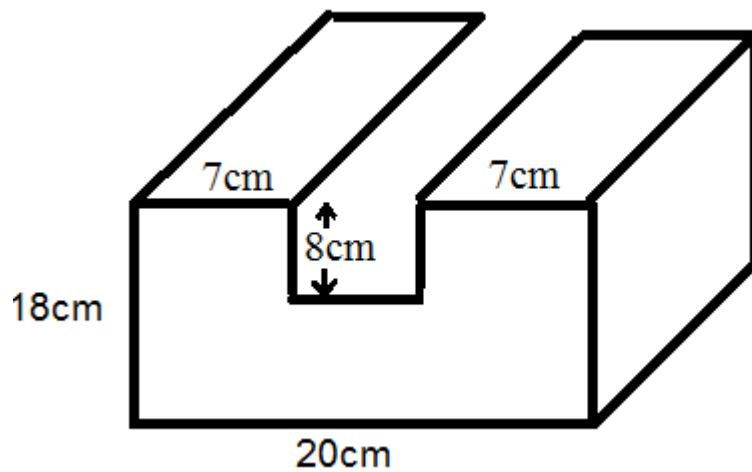
$$A = A_{\square} - A_{\triangle} = 65\text{m}^2$$

Zusammengesetzte Körper

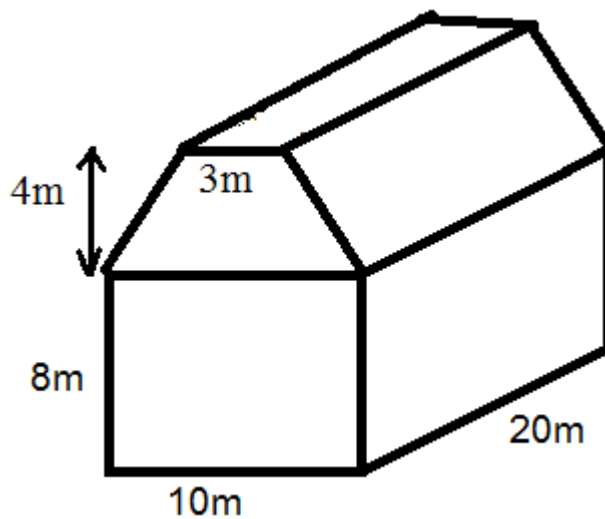
1) Hier werden das Volumen (V) und die Oberfläche (O) gesucht



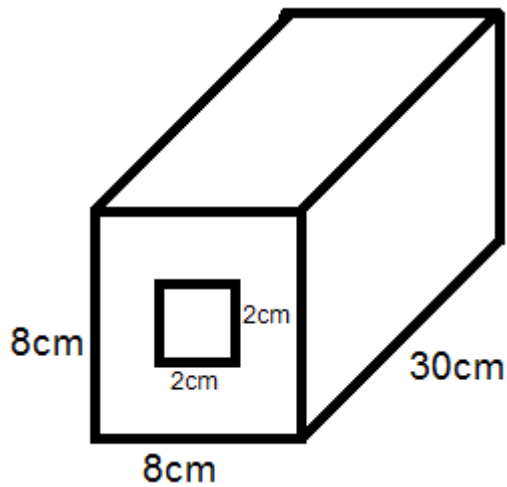
2) V und O gesucht



3) V gesucht



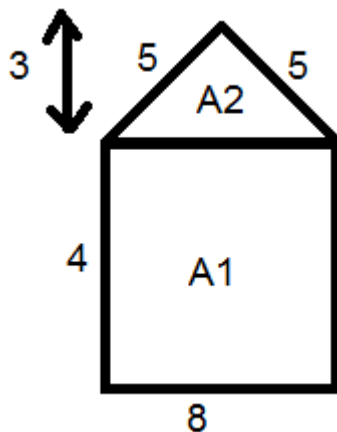
4)



V gesucht

Lösung:

1)



$$A_1 = 4\text{m} \cdot 8\text{m} = 32\text{m}^2$$

$$A_2 = \frac{1}{2} \cdot 8\text{m} \cdot 3\text{m} = 12\text{m}^2$$

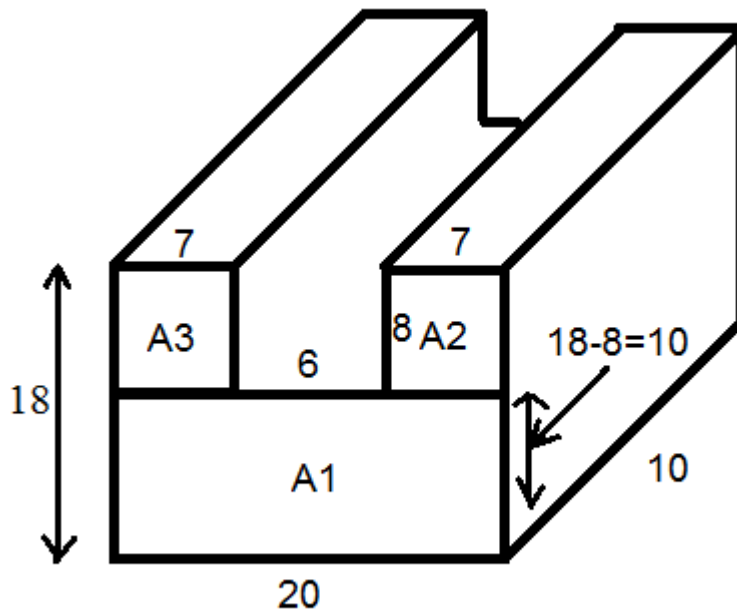
$$G = A_1 + A_2 = 44\text{m}^2$$

$$V = G \cdot h = 44\text{m}^2 \cdot 20\text{m} = 880\text{m}^3$$

$$\text{Mantel } M = (5\text{m} + 5\text{m} + 4\text{m} + 4\text{m} + 8\text{m}) \cdot 20\text{m} = 26\text{m} \cdot 20\text{m} = 520\text{m}^2$$

$$\text{Oberfläche } O = M + 2 \cdot G = 520\text{m}^2 + 2 \cdot 44\text{m}^2 = 608\text{m}^2$$

2)



$$A_1 = 20\text{cm} \cdot 10\text{cm} = 200\text{cm}^2$$

$$A_2 = 7\text{cm} \cdot 8\text{cm} = 56\text{cm}^2$$

$$A_3 = A_2$$

$$G = A_1 + 2 \cdot A_2 = 200\text{cm}^2 + 2 \cdot 56\text{cm}^2 = 312\text{cm}^2$$

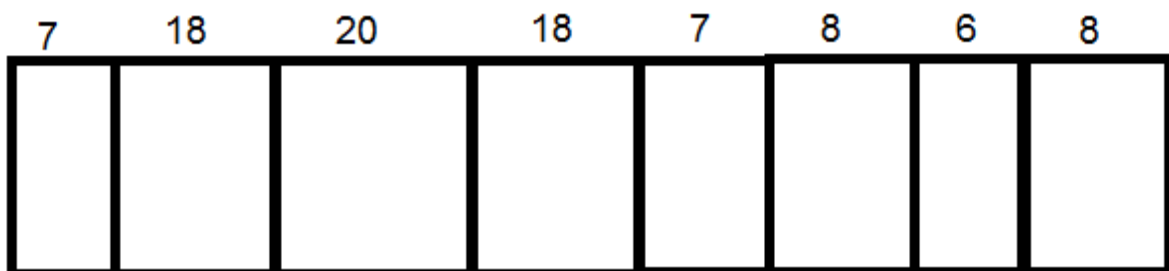
oder

$$G = 18\text{cm} \cdot 20\text{cm} - 6\text{cm} \cdot 8\text{cm} = 312\text{cm}^2$$

$$V = G \cdot h = 312\text{cm}^2 \cdot 10\text{cm} = 3120\text{cm}^3$$

$$O = M + 2 \cdot G$$

Mantel



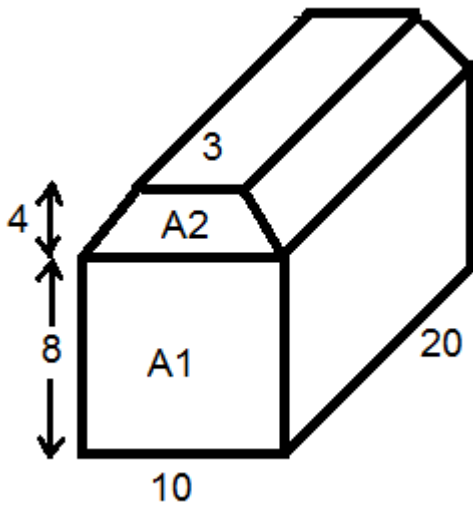
$$M = 92\text{cm} \cdot 10\text{cm} = 920\text{cm}^2$$

Es gilt:

$$M = \text{Umfang Grundfläche} \cdot \text{Körperhöhe}$$

$$O = M + 2 \cdot G = 1544\text{cm}^2$$

3)



$$A_1 = 8\text{m} \cdot 10\text{m} = 80\text{m}^2$$

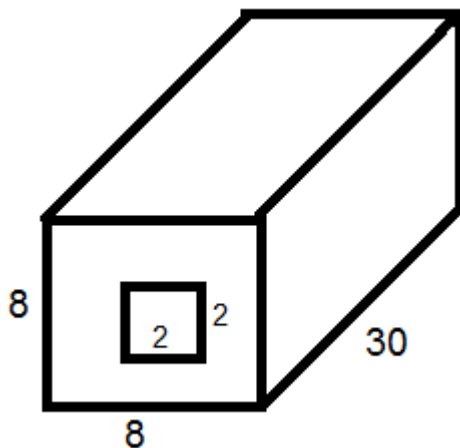
A_2 ist ein Trapez

$$A_2 = \frac{3\text{m} + 10\text{m}}{2} \cdot 4\text{m} = 26\text{m}^2$$

$$G = A = A_1 + A_2 = 106\text{m}^2$$

$$V = G \cdot h_K = 106\text{m}^2 \cdot 20\text{m} = 2120\text{m}^3$$

4)



$$A_1 = 8\text{cm} \cdot 8\text{cm} = 64\text{cm}^2$$

$$A_2 = 2\text{cm} \cdot 2\text{cm} = 4\text{cm}^2$$

$$G = A_1 - A_2 = 60\text{cm}^2$$

$$V = G \cdot h_K = 60\text{cm}^2 \cdot 30\text{cm} = 1800\text{cm}^3$$