

<https://www.gutefrage.net/frage/volumen-und-oberflaeche-5>

Aufgabe b

Volumen berechnen

Volumen Dreieckprisma V1

$$V1 = (a * h2 / 2) * L$$

$$V1 = (8 * 11 / 2) * 10$$

$$V1 = 440 \text{ cm}^3$$

Volumen Quader V2

$$V2 = a * h1 * L$$

$$V2 = 8 * 8 * 10$$

$$V2 = 640 \text{ cm}^3$$

Volumen Quader V3

$$V3 = b * h1 * L$$

$$V3 = 7,2 * 8 * 10$$

$$V3 = 576 \text{ cm}^3$$

Volumen Halbbohrung V4

$$V4 = ((d / 2)^2 * \pi * h1) / 2$$

$$V4 = ((10 / 2)^2 * \pi * 8) / 2$$

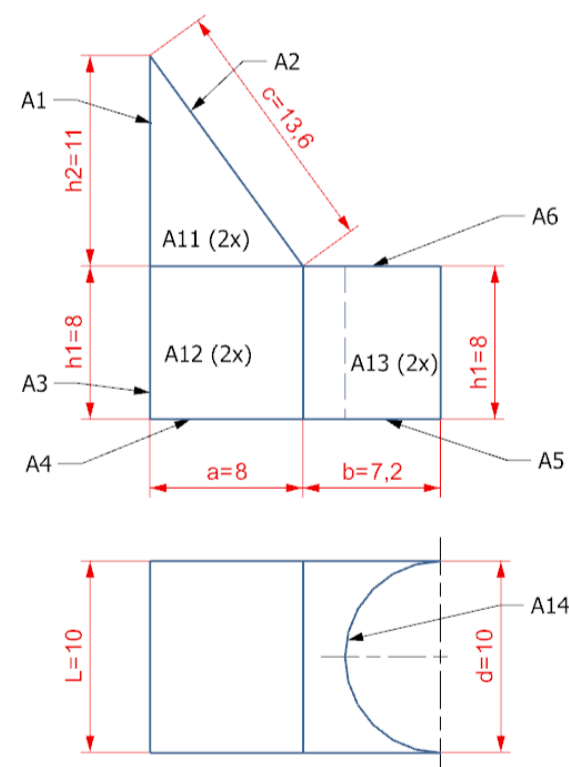
$$V4 = 314,159265 \text{ cm}^3$$

Volumen Gesamtkörper V

$$V = V1 + V2 + V3 - V4$$

$$V = 440 + 640 + 576 - 314,159265$$

$$V = 1341,840735 \text{ cm}^3$$



Oberflächeninhalt berechnen

$$A1 = h2 * L$$

$$A1 = 11 * 10$$

$$A1 = 110 \text{ cm}^2$$

$$A2 = c * L$$

$$A2 = 13,6 * 10$$

$$A2 = 136 \text{ cm}^2$$

$$A3 = h1 * L$$

$$A3 = 8 * 10$$

$$A3 = 80 \text{ cm}^2$$

$$A4 = a * L$$

$$A4 = 8 * 10$$

$$A4 = 80 \text{ cm}^2$$

$$A5 = (b * L) - ((d / 2)^2 * \pi) / 2$$

$$A5 = (7,2 * 10) - (((10 / 2)^2 * \pi) / 2)$$

$$A5 = 32,730092 \text{ cm}^2$$

$$A6 = (b * L) - ((d / 2)^2 * \pi) / 2$$

$$A6 = (7,2 * 10) - (((10 / 2)^2 * \pi) / 2)$$

$$A6 = 32,730092 \text{ cm}^2$$

$$A11 = ((a * h2) / 2) * 2$$

$$A11 = ((8 * 11) / 2) * 2$$

$$A11 = 88 \text{ cm}^2$$

$$A12 = a * h1 * 2$$

$$A12 = 8 * 8 * 2$$

$$A12 = 128 \text{ cm}^2$$

$$A13 = b * h1 * 2$$

$$A13 = 7,2 * 8 * 2$$

$$A13 = 115,2 \text{ cm}^2$$

$$A14 = (d * \pi / 2) * h1$$

$$A14 = (10 * \pi) / 2 * 8$$

$$A14 = 125,663706 \text{ cm}^2$$

Oberfläche gesamt O

$$O = A1 + A2 + A3 + A4 + A5 + A6 + A11 + A12 + A13 + A14$$

$$O = 110 + 136 + 80 + 80 + 32,730092 + 32,730092 + 88 + 128 + 115,2 + 125,663706$$

$$O = 928,324 \text{ cm}^2$$