

Berechne die Flächen und Umfänge folgender Figuren **ohne** Taschenrechner und Formelsammlung. Gib jeweils alle Formeln an, die du zur Berechnung verwendest. Zeichne zur Berechnung zusätzlich nötige Elemente ein.

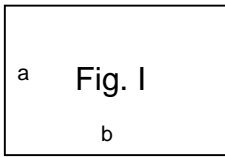


Fig. I

$$U = 2 * a + 2 * b = 2 * 2 \text{ cm} + 2 * 3 \text{ cm} = 10 \text{ cm}$$

$$A = a * b = 2 \text{ cm} * 3 \text{ cm} = 6 \text{ cm}^2$$

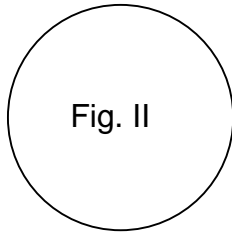


Fig. II

$$U = d * \pi = 3 \text{ cm} * 3,14 = 9,42 \text{ cm}$$

$$A = r^2 * \pi = (1,5 \text{ cm})^2 * \pi = 2,25 \text{ cm}^2 * 3,14 \approx 7 \text{ cm}^2$$

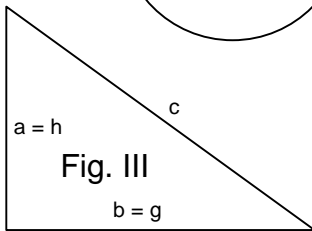


Fig. III

$$U = a + b + c = 3 \text{ cm} + 4 \text{ cm} + 5 \text{ cm} = 12 \text{ cm}$$

$$A = g * h : 2 = 3 \text{ cm} * 4 \text{ cm} : 2 = 6 \text{ cm}^2$$

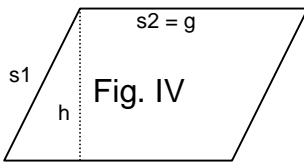


Fig. IV

$$U = 2 * s1 + 2 * s2 = 2 * 2,2 \text{ cm} + 2 * 3 \text{ cm} = 10,4 \text{ cm}$$

$$A = g * h = 2 \text{ cm} * 3 \text{ cm} = 6 \text{ cm}^2$$

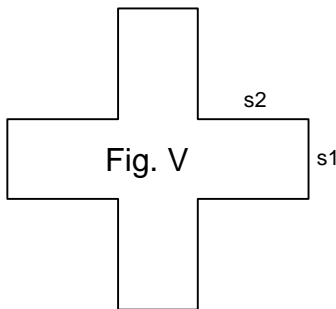


Fig. V

$$U = 8 * s1 + 4 * s2 = 8 * 1,5 \text{ cm} + 4 * 1 \text{ cm} = 16 \text{ cm}$$

$$A = 4 * s1 * s2 + s1 * s1 = 4 * 1 \text{ cm} * 1,5 \text{ cm} + 1 \text{ cm} * 1 \text{ cm} = 7 \text{ cm}^2$$

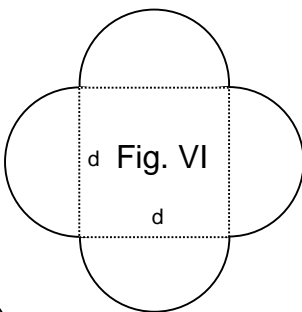


Fig. VI

$$U = 2 * d * \pi = 2 * 2 \text{ cm} * 3,14 = 12,56 \text{ cm}$$

$$A = 2 * r^2 * \pi + d * d = 2 * (1 \text{ cm})^2 * \pi + 2 \text{ cm} * 2 \text{ cm} \approx 10,3 \text{ cm}^2$$

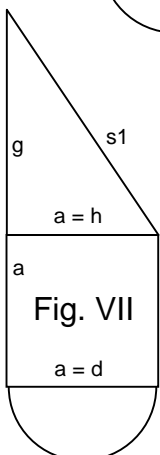


Fig. VII

$$U = g + s1 + 2 * a + 0,5 * d * \pi$$

$$= 3 \text{ cm} + 3,6 \text{ cm} + 2 * 2 \text{ cm} + 0,5 * 2 \text{ cm} * 3,14 = 13,74 \text{ cm}$$

$$A = g * h : 2 + a * a + 0,5 * r^2 * \pi$$

$$= 3 \text{ cm} * 2 \text{ cm} : 2 + 2 \text{ cm} * 2 \text{ cm} + 0,5 * 1 \text{ cm}^2 * 3,14$$

$$= 3 \text{ cm}^2 + 4 \text{ cm}^2 + 1,57 \text{ cm}^2 = 8,57 \text{ cm}^2$$