

3) Berechne die fehlenden Größen in deinem Heft. Runde sinnvoll.

	a)	b)	c)	d)	e)	f)	g)	h)
r in cm	5,0	6,0	■	4,0	■	■	■	4,0
α	60°	120°	■	■	■	72°	30°	90°
b in cm	■	■	6,4	■	6,5	1,4 π	■	■
A _{Sektor} in cm ²	■	■	16,0	2 π	26	■	$\frac{4}{3}\pi$	■
A _{Segment} in cm ²	■	—	—	—	—	—	—	■

$$a) \quad b = \frac{\alpha}{360^\circ} \cdot 2 \cdot r \cdot \pi = \frac{60^\circ}{360^\circ} \cdot 2 \cdot 5,0 \text{ cm} \cdot \pi = \underline{\underline{5,24 \text{ cm}}}$$

$$A_{\text{Sektor}} = \frac{\alpha}{360^\circ} \cdot r^2 \cdot \pi = \frac{60^\circ}{360^\circ} \cdot (5,0 \text{ cm})^2 \cdot \pi = \underline{\underline{13,09 \text{ cm}^2}}$$

$$b) \quad b = \frac{\alpha}{360^\circ} \cdot 2 \cdot r \cdot \pi = \frac{120^\circ}{360^\circ} \cdot 2 \cdot 6,0 \text{ cm} \cdot \pi = \underline{\underline{12,57 \text{ cm}}}$$

$$A_{\text{Sektor}} = \frac{\alpha}{360^\circ} \cdot r^2 \cdot \pi = \frac{120^\circ}{360^\circ} \cdot (6,0 \text{ cm})^2 \cdot \pi = \underline{\underline{37,70 \text{ cm}^2}}$$

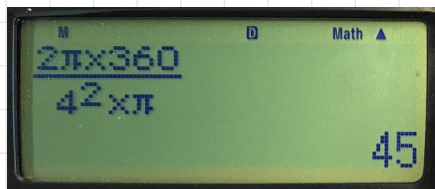
$$c) \quad A = \frac{1}{2} \cdot r \cdot b \quad 16 \text{ cm}^2 = \frac{1}{2} \cdot r \cdot 6,4 \text{ cm} \quad | \cdot 2 \quad | : 6,4 \text{ cm}$$

$$r = \frac{2 \cdot 16 \text{ cm}^2}{6,4 \text{ cm}} = \underline{\underline{5,0 \text{ cm}}}$$

$$b = \frac{\alpha}{360^\circ} \cdot 2 \cdot r \cdot \pi \quad 6,4 \text{ cm} = \frac{\alpha}{360^\circ} \cdot 2 \cdot 5 \text{ cm} \cdot \pi$$

$$\alpha = \frac{6,4 \text{ cm} \cdot 360^\circ}{2 \cdot 5 \text{ cm} \cdot \pi} = \underline{\underline{73,34^\circ}}$$

$$d) A = \frac{\alpha}{360^\circ} \cdot r^2 \cdot \pi$$

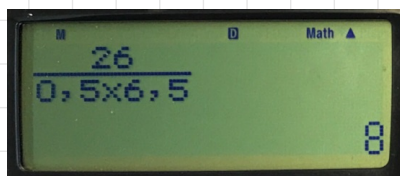


$$2\pi \text{ cm}^2 = \frac{\alpha}{360^\circ} \cdot (4 \text{ cm})^2 \cdot \pi$$

$$\alpha = \frac{2\pi \text{ cm}^2 \cdot 360^\circ}{(4 \text{ cm})^2 \cdot \pi} = \underline{\underline{45^\circ}}$$

$$b = \frac{\alpha}{360^\circ} \cdot 2 \cdot r \cdot \pi = \frac{45^\circ}{360^\circ} \cdot 2 \cdot 4 \cdot \pi \text{ cm} = \underline{\underline{3,14 \text{ cm}}}$$

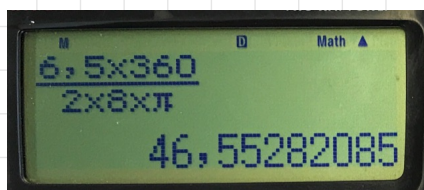
$$e) A = \frac{1}{2} \cdot r \cdot b \quad 26 \text{ cm}^2 = \frac{1}{2} \cdot r \cdot 6,5 \text{ cm} \quad | \cdot 2 \quad | : 6,5 \text{ cm}$$



$$r = \frac{26 \text{ cm}^2}{0,5 \cdot 6,5 \text{ cm}} = \underline{\underline{8 \text{ cm}}}$$

$$b = \frac{\alpha}{360^\circ} \cdot 2 \cdot r \cdot \pi$$

$$6,5 \text{ cm} = \frac{\alpha}{360^\circ} \cdot 2 \cdot 8 \text{ cm} \cdot \pi$$



$$\alpha = \frac{6,5 \text{ cm} \cdot 360^\circ}{2 \cdot 8 \text{ cm} \cdot \pi} = \underline{\underline{46,55^\circ}}$$

$$h) b = \frac{\alpha}{360^\circ} \cdot 2 \cdot r \cdot \pi = \frac{90^\circ}{360^\circ} \cdot 2 \cdot 4 \text{ cm} \cdot \pi = \underline{\underline{6,28 \text{ cm}}}$$

$$A = \frac{\alpha}{360^\circ} \cdot r^2 \cdot \pi = \frac{90^\circ}{360^\circ} \cdot 4^2 \cdot \pi \text{ cm}^2 = \underline{\underline{12,57 \text{ cm}^2}}$$

alternativ

$$A = \frac{1}{2} \cdot b \cdot r = \frac{1}{2} \cdot 6,28 \text{ cm} \cdot 4 \text{ cm} = \underline{\underline{12,56 \text{ cm}^2}}$$