

LÖSUNGEN

1. $a = 12 \text{ cm}$
 $b = 8 \text{ cm}$
 $h = 5 \text{ cm}$
 $r = ?$

a. $A = \frac{a+c}{2} \cdot h = 50 \text{ cm}^2 \quad (1)$

b. $A = r^2 \cdot \pi$
 ALSO: $r = \sqrt{\frac{A}{\pi}} = \underline{\underline{3,99 \text{ cm}}} \quad (1)$

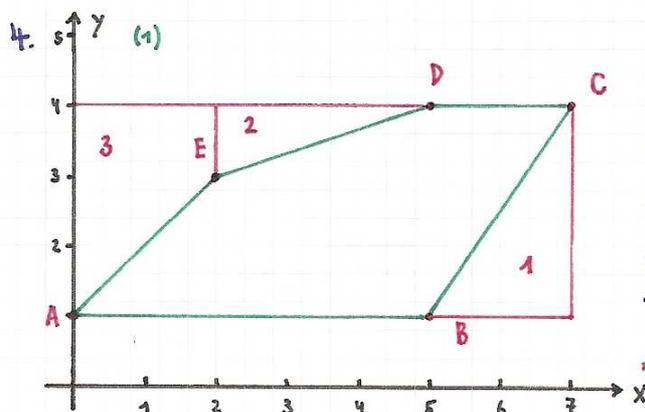
2. a) $A = \frac{r_1^2 \cdot \pi}{2} + \frac{r_2^2 \cdot \pi}{2} = \underline{\underline{204,20 \text{ cm}^2}} \quad (1)$

b) $U = \frac{2 \cdot r_1 \cdot \pi}{2} + \frac{2 \cdot r_2 \cdot \pi}{2} + (2r_1 - 2r_2) = \underline{\underline{54,27 \text{ cm}}} \quad (1)$

3. PYTHAGORAS - KATHETENSATZ - HÖHENSATZ! (je ½)

a) 1. $a^2 = p \cdot c \Rightarrow c = \frac{a^2}{p} = \underline{\underline{16 \text{ cm}}}$
 2. $q = c - p = \underline{\underline{12 \text{ cm}}}$
 3. $b = \sqrt{c^2 - a^2} = \underline{\underline{13,86 \text{ cm}}}$
 4. $h = \sqrt{p \cdot q} = \underline{\underline{6,93 \text{ cm}}}$

b) 1. $c = \sqrt{a^2 + b^2} = \underline{\underline{10 \text{ cm}}}$
 2. $a^2 = p \cdot c \Rightarrow p = \frac{a^2}{c} = \underline{\underline{3,6 \text{ cm}}}$
 3. $q = c - p = \underline{\underline{6,4 \text{ cm}}}$
 4. $h = \sqrt{p \cdot q} = \underline{\underline{4,8 \text{ cm}}}$



$A_{\square} = b \cdot h = 7 \cdot 3 = 21,0 \text{ cm}^2$
 $- A_1 = \frac{a \cdot b}{2} = \frac{2 \cdot 3}{2} = 3,0 \text{ cm}^2$
 $- A_2 = \frac{a \cdot b}{2} = \frac{3 \cdot 1}{2} = 1,5 \text{ cm}^2 \quad (2)$
 $- A_3 = \frac{a+c}{2} \cdot h = \frac{3+1}{2} \cdot 2 = 4,0 \text{ cm}^2$

 $A_{ABCOE} = \underline{\underline{12,5 \text{ cm}^2}}$

5. a) $A = \frac{r^2 \cdot \pi \cdot d}{360} \quad | \cdot 360 \quad (1)$

$360 A = r^2 \cdot \pi \cdot d \quad | : \pi \cdot d$
 $\frac{360 \cdot A}{\pi \cdot d} = r^2 \quad | \sqrt{\quad}$

$\underline{\underline{\frac{360 \cdot A}{\pi \cdot d} = r}}$ oder $A = \frac{b \cdot r}{2}$
 $\Rightarrow r = \frac{2 \cdot A}{b}$

b) $A = \frac{a+c}{2} \cdot h \quad | \cdot 2 \quad (1)$

$2A = (a+c) \cdot h \quad | : h$
 $\frac{2A}{h} = a+c \quad | - c$

$\underline{\underline{\frac{2A}{h} - c = a}}$

$$6. \quad u = 6 + b + 3 + x + 5 + b + y \quad \text{und} \quad b = \frac{2 \cdot r \cdot \pi}{2} = r \cdot \pi = 3,14 \quad (1)$$

$$x = \sqrt{3^2 + 10^2} = 10,44 \quad (1)$$

$$\text{Also: } u = 6 + 3,14 + 3 + 10,44 + 5 + 3,14 + 7,81$$

$$y = \sqrt{6^2 + 5^2} = 7,81$$

$$u = \underline{\underline{38,53 \text{ cm}}}$$

$$7. \quad u = 30 + b_1 + b_2 + 65 + 35 \quad \text{und} \quad b_1 = \frac{2 \cdot r \cdot \pi}{4} = \frac{2 \cdot 14 \cdot \pi}{4} = 21,99 \quad (1)$$

$$b_2 = \frac{2 \cdot r \cdot \pi}{4} = \frac{2 \cdot 24 \cdot \pi}{4} = 32,99 \quad (1)$$

$$\text{Also: } u = 30 + 21,99 + 32,99 + 65 + 35$$

$$u = \underline{\underline{184,98}}$$

$$8. \quad A_{\triangle} = \frac{r^2 \cdot \pi}{8} = \frac{28^2 \cdot \pi}{8} = 307,88 \text{ cm}^2 \quad (1)$$

$$- A_1 = \frac{s \cdot s}{2} = \frac{14 \cdot 14}{2} = 98,0 \text{ cm}^2 \quad (1)$$

$$- A_2 = \frac{r^2 \cdot \pi}{4} = \frac{14^2 \cdot \pi}{4} = 153,94 \text{ cm}^2 \quad (1)$$

$$A_{\text{all}} = \underline{\underline{55,94 \text{ cm}^2}}$$