

# WT - Flächenberechnung

(A1)

Trapez:  $A_1 = \frac{a+c}{2} \cdot h = \frac{1+5}{2} \cdot 3 = 9 \text{ cm}^2$

Rechteck 1:  $A_2 = a \cdot b = 5 \cdot 3 = 15 \text{ cm}^2$

Rechteck 2:  $A_3 = a \cdot b = 3 \cdot 1 = 3 \text{ cm}^2$

Quadrat:  $A_4 = a^2 = 3^2 = 9 \text{ cm}^2$

$A_{\text{Gesamt}} = 2 \cdot A_1 + 2 \cdot A_2 + A_3 + A_4 = \underline{60 \text{ cm}^2}$

(A2)

a) Parallelogramm:  $A = g \cdot h = 450 \cdot 205 = \underline{92250 \text{ m}^2}$

b)  $92250 \text{ m}^2 : 10000 \cdot 6000 \text{ €/ha} = \underline{55350 \text{ €}}$

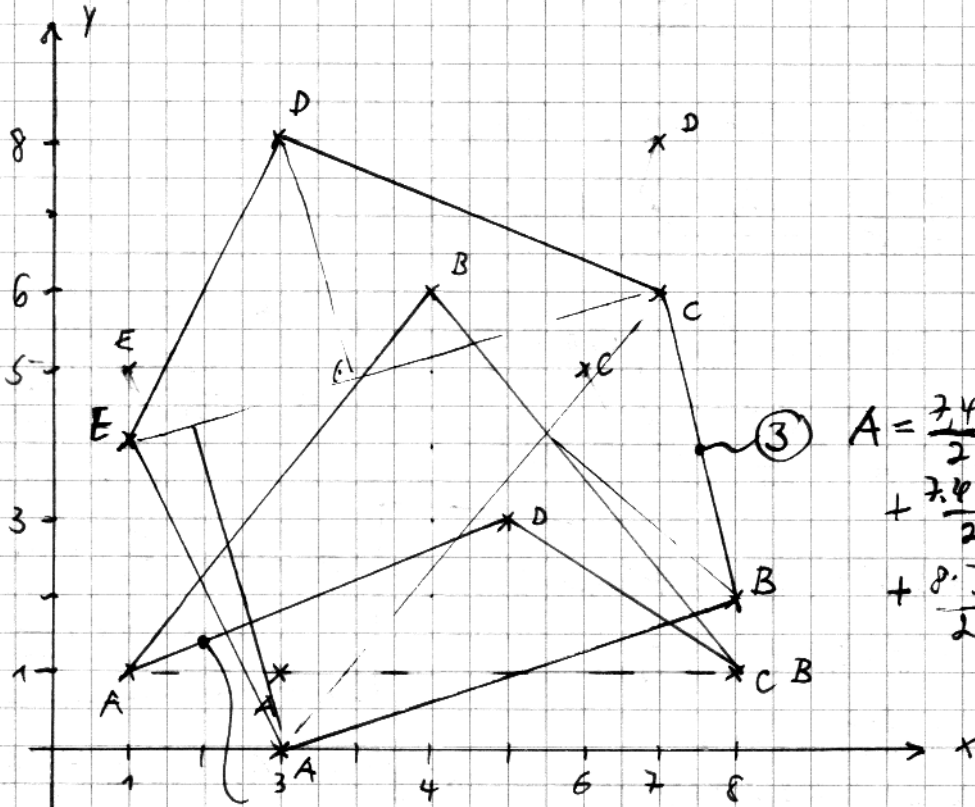
(A3)

$U = 2\pi r \iff r = \frac{U}{2\pi} = \frac{3,46}{2\pi} = 0,551 \text{ m}$

$\Rightarrow d = \underline{1,1 \text{ m}}$

$A = \pi r^2 = \underline{0,953 \text{ m}^2}$

(A4)



①  $A = \frac{7 \cdot 5}{2} - \frac{7 \cdot 2}{2} = \underline{10,5 \text{ cm}^2}$

③  $A = \frac{7,4 \cdot 3,4}{2} + \frac{7,4 \cdot 4,5}{2} + \frac{8 \cdot 3,4}{2} = \underline{42,83 \text{ cm}^2}$

A5

a)  $A = a \cdot b \quad | : b$   
 $A = \frac{240}{6} = 8 \text{ cm}$   
 $a = \frac{240}{8} = 30$

b)  $A = \frac{p \cdot h}{2} \quad | \cdot 2 : p$   
 $\frac{2A}{p} = h = \frac{2 \cdot 48}{10} = 9,6 \text{ cm}$

c)  $A = g \cdot h \quad | : h$   
 $g = \frac{A}{h} = \frac{96}{6} = 16 \text{ cm}$

d)  $A = \frac{a+c}{2} \cdot h \quad | \cdot 2 : (a+c)$   
 $\frac{2A}{a+c} = h = \frac{2 \cdot 360}{6+3} = 80 \text{ cm}$

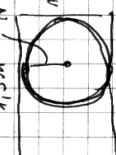
A6

1)  $U = 2\pi r = 100 \text{ cm} ; A = \pi r^2 = 796,23 \text{ cm}^2$

2)  $\frac{U}{2\pi} = r = 5 \text{ dm} ; A = 78,54 \text{ dm}^2$

3)  $r = \sqrt{\frac{A}{\pi}} = 3 \text{ mm} ; U = 18,85 \text{ m}$

A7

$1,5 \text{ m} \quad r = 0,6 \text{ m}$   
  
 $A_{\text{Rechteck}} = 1,5 \cdot 1,2 = 1,8 \text{ m}^2$   
 $A_{\text{Kreis}} = \pi \cdot 0,6^2 = 1,131 \text{ m}^2$   
 $\frac{A_{\text{K}}}{A_{\text{R}}} = 62,83\% \rightarrow \text{Abfall} = 37,16\%$

A8

$d = 0,85 \text{ m} , U = \pi \cdot d , 70 \text{ km} = 70000 \text{ m}$

Anzahl =  $\frac{70000}{\pi \cdot 0,85} = 26213,8$  Umdrehungen

A9

a)  $s = 2\pi r \cdot \frac{\alpha}{360^\circ} \quad | : 2\pi \cdot \frac{360^\circ}{\alpha}$   
 $r = \frac{s}{2\pi} \cdot \frac{360^\circ}{\alpha} = \frac{6 \cdot 360^\circ}{2\pi \cdot 10^\circ} = 4,44 \text{ cm}$

b)  $b = 2\pi r \cdot \frac{\alpha}{360^\circ} \quad | : 2\pi r \cdot \frac{360^\circ}{\alpha}$   
 $\alpha = \frac{b \cdot 360^\circ}{2\pi r} = \frac{4,3 \cdot 360^\circ}{2 \cdot \pi \cdot 0,3} = 29,68^\circ$

A10

$A_1 = 3,354$  (durch Teileramen)  
 links:  $A_0 = \pi \cdot 3,354^2 = 35,343 \text{ cm}^2$   
 $A_{\Delta} = \frac{6 \cdot 5}{2} = 9 \text{ cm}^2$   
 $A_0 = \pi \cdot 1,477^2 = 8,835 \text{ cm}^2$   
 $r = 1,477$   
 $A = 17,5 \text{ cm}^2$

rechts:  $A_0 = \pi r^2 = 28,274 \text{ cm}^2$   
 $A_{\square} = 4 \cdot 2a = 18 \text{ cm}^2$   
 $A_{\text{D}} = 14,137 \text{ cm}^2$

$A = A_0 + A_{\text{D}} - A_{\square} = 32,137 \text{ cm}^2$   
 $U = 2\pi r + a + 2a + 2\pi r = 40,61 \text{ cm}$   
 $U = U_0 + 2a = 2\pi r + 2a = 24,15 \text{ cm}$