

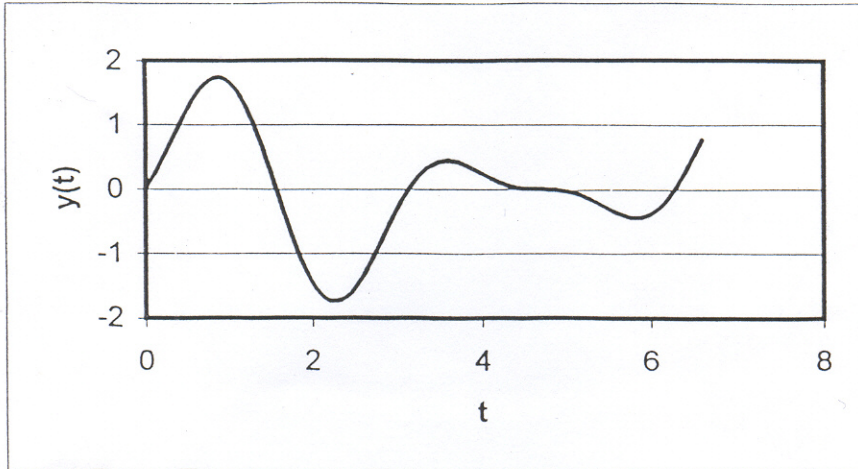
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Schatten = 0,85 m horizontal

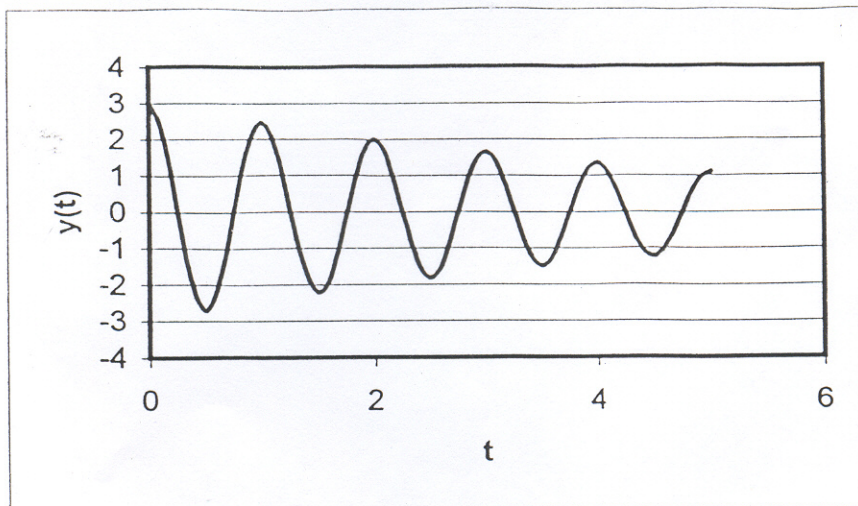
vertikal, bei gleichem Sonnenstand: 4,71 m

19

t	0	$\frac{\pi}{4}$	$\frac{\pi}{2}$	$\frac{3\pi}{4}$	π	$\frac{5\pi}{4}$	$\frac{3\pi}{2}$	$\frac{7\pi}{4}$	2π
y(t)	0	1.71	0	-1.71	0	0.29	0	-0.29	0



20



21

Zuwachs = 41,06 %

22

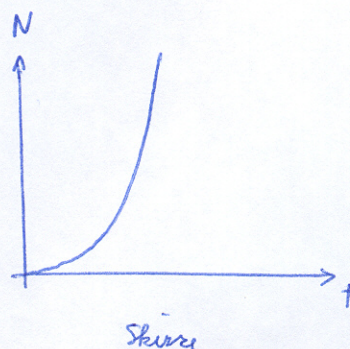
verdoppelt: 20,15 Jahre

verdreifacht: 31,94 Jahre

23

noch 24 h: $4096 \times N_0$

$1,25 N_0$: 0,64 h



VE Mathematische GrundlagenFunktionen: Lösungen ohne Gewähr

① Wertepaare: 15 / 9 möglich
 15 / 25 ⚡
 24 / 20 ⚡

② $y = kx + d$

$p = 0,09388 \cdot d + 1$

③ $v = g \cdot t$

$v(t=0,1) = \underline{0,98 \text{ m/s}}$

$v(t=0,2) = \underline{1,96 \text{ m/s}}$

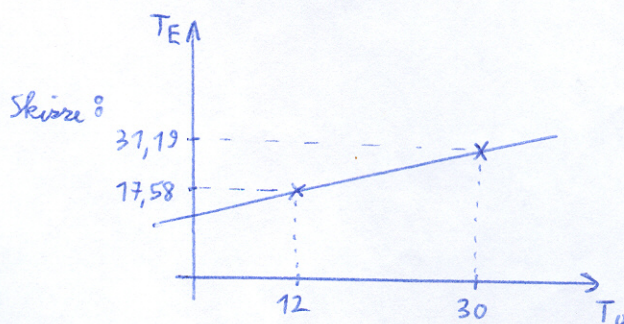
$t = \text{negativ} \rightarrow v = \text{negativ} \rightarrow \text{Bewegung nach oben}$

④ Abstand = 1,59 m $\rightarrow$ Maus kann durch

⑤ 1980 ... 329 ppm
 1990 ... 337 ppm
 2000 ... 345 ppm
 2010 ... 353 ppm
 + 8 ppm pro 10 Jahre

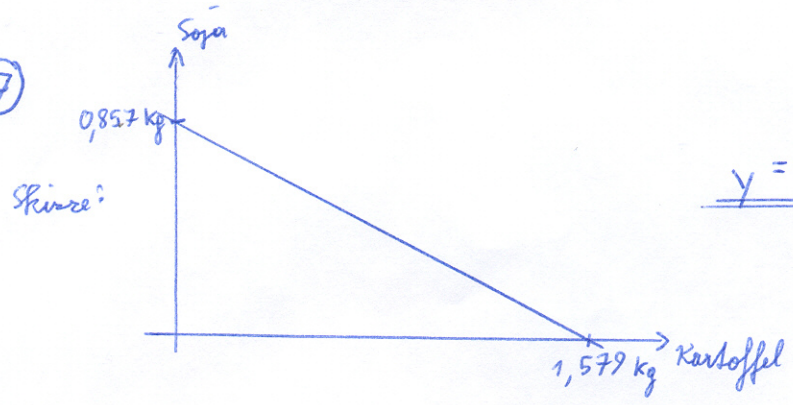
⑥ $T_E (T_U = 12^\circ\text{C}) = \underline{17,58^\circ\text{C}}$

$T_E (T_U = 30^\circ\text{C}) = \underline{31,19^\circ\text{C}}$



②

⑦



$$y = \frac{300}{0,35} - \frac{0,19}{0,35} x$$

⑧

$$V = \frac{4}{3} \pi r^3 \quad S = 4 \pi r^2$$

$$V = S \frac{r}{3}$$

ohne S ausgedrückt: $V = \frac{1}{6} \sqrt{\frac{S^3}{\pi}}$

Verdopplung von $S \rightarrow V$ ist um $\sqrt[3]{8}$ höher

⑨

a) $x_1 = 0$
 $x_2 = 2p$

b) $x_1 = 0$
 $x_2 = \frac{3}{q}$

c) $x_1 = 0$
 $x_2 = \frac{-1-3}{n}$

⑩

$y_1 = 2$
 $y_2 = -2$

y_3 u. y_4 keine ~~reellen~~ Zahlen

⑪

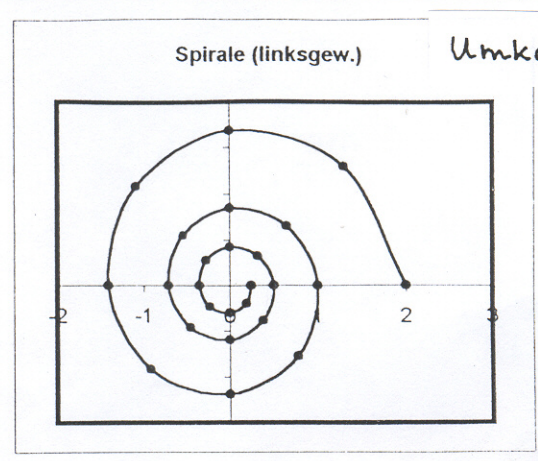
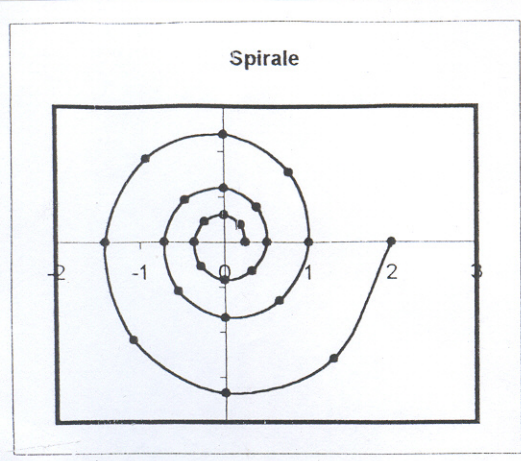
$x_1 = 5,24$
 $x_2 = 0,76$

$y_1 = 0,76$
 $y_2 = 5,24$

⑫

Anzahl der Boote = $\frac{A}{50 \cdot v^2}$

⑬



Umkehrung d. Drehsinns:

$$r = \frac{c - (b \cdot y + d)}{2}$$

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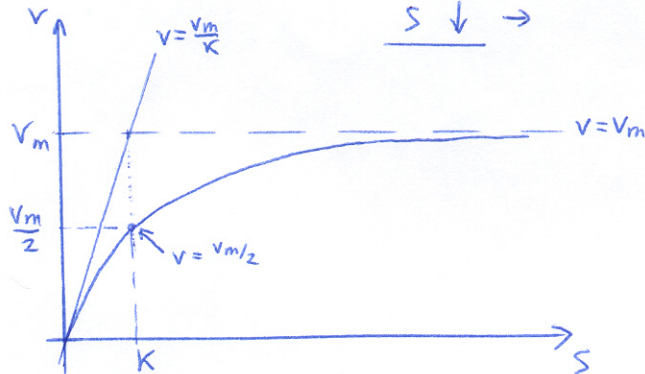
$$v = v_m \cdot \frac{s}{s+k}$$

$$s \uparrow \rightarrow \text{Bruch wird } 1 \rightarrow v = v_m$$

$$s = k \rightarrow \frac{1}{2} \rightarrow v = v_m/2$$

$$s \downarrow \rightarrow \frac{1}{k} \rightarrow v = v_m/k$$

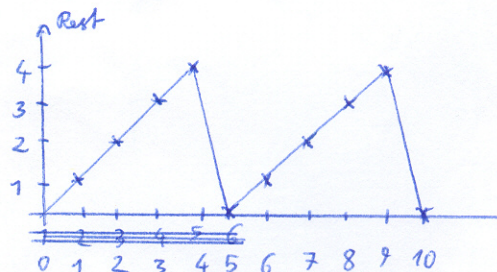
Skizze



Umformung zu: $\frac{1}{v} = \frac{1}{v_m} + \frac{k}{v_m \cdot s}$

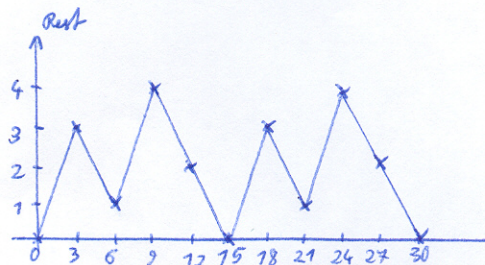
15

10 ist eine Periode



16

periodische Funktion mit Periode = 15



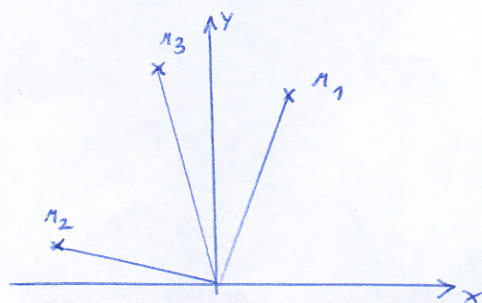
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$$\alpha_1 = 27,5^\circ \rightarrow x = 8,04 \quad y = 26,30$$

$$\alpha_2 = 18,7^\circ \rightarrow x = -18,06 \quad y = 4,84$$

$$\alpha_3 = 31,3^\circ \rightarrow x = -8,63 \quad y = 30,09$$

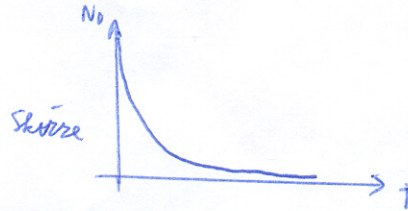
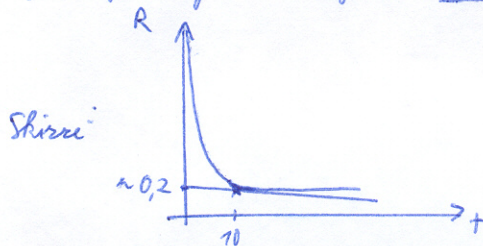
Skizze:



(5)

(24) nach 2 d. u. 2h verbleiben $\frac{1}{16} N_0$

$$\frac{N_0}{1024} \rightarrow \underline{125 \text{ h}}$$

(25) 16,28 kg(26) 1980 ... $4,51 \times 10^9$ 1990 ... $5,50 \times 10^9$ 2000 ... $6,70 \times 10^9$ 2010 ... $8,17 \times 10^9$ (27) Steigung (R10) = $-0,00243$ y-Wert bei schneiden = $0,1983$ Geradengleichung der Tangente: $y = -0,00243x + 0,1983$ (28) $t_{1/2} = 12,92 \text{ Tage}$ (29) $\beta = 2,303$ 37% werden absorbiert(30) $\ln y = \ln c + K \cdot \ln x$

$$\underline{\ln x = \frac{\ln y - \ln c}{K}}$$