

Notizen Physik

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1 Formeln

1.1 Kraft

$$F = m * a$$

1.2 Kreisbewegungen

Bahngeschwindigkeit: $v = \frac{\Delta s}{\Delta t} = \frac{2\pi r}{T}$

Drehfrequenz $f = \frac{n}{t}$

Wenn $f = \frac{1}{T}$ dann $v = 2\pi * r * f$

Kreisfrequenz: $\omega = \frac{2\pi}{T}$ also $\omega = 2\pi * f$ also $\omega = \frac{v}{r}$

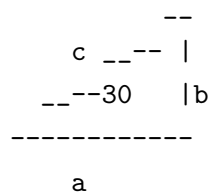
2 Aufgaben

2.1 26. Januar 2015

179 geg: $m = 230 * 10^3 kg$

180 geg: $m = 70000kg, K = 1900N$

ges(a): a



$$\frac{a}{\sin(\alpha)} = \frac{b}{\sin(\beta)} = \frac{c}{\sin(\gamma)}$$

$$\frac{a}{\sin(60^\circ)} = \frac{b}{\sin(30^\circ)} = \frac{1.9N}{\sin(90^\circ)}$$

$$a = \frac{F}{m}, a = \frac{1900}{70000} = 0.027142857$$

2.2 Skript Altowsche Fallmaschine - Seilkraft

$m_1 = \text{Masse des Sensors} = 202g, F_{G2} = 1.96N$

$m_{2A} = 170g; a_A = (-)0.916 \frac{m}{s^2}$

$m_{2B} = 250g; a_B = 0.970 \frac{m}{s^2};$

$$F_{SB} = m_1 * a_B + G_{G1} = m_1 * (a_B + g) \text{ also } 0.202kg * (0.970 + 9.81) \frac{m}{s^2} = 2.2$$

2.3 Seilkraft

2.3.1 S18, N.7

$$a = 0.818 \frac{m}{s^2}$$

$$F_{Res} = F_{G,1} - F_S$$

$$F_S = F_{G,1} - F_{Res}$$

$$m_1 * g - m_1 * a = m_1(g - a)$$

$$2.6kg * (9.81 - 0.818) \frac{m}{s^2} = 23.4N$$

$$2.2kg * (9.81 - 0.818) \frac{m}{s^2} = 19.8N$$