

NOME COMPLETO

Gabarito

NÚMERO

2.1 FÍSICA  
3º período

6 de setembro de 2018.

TURMA

A B C D E F G H I J K L M N O P Q

PONTUAÇÃO

6,0

NOTA (EM 10,0)

10

UNIDADE

ASA SUL

ASA NORTE

ÁGUAS CLARAS

× FATOR  
A RISTE =

QUESTÃO 1

$$a) \quad a_{cp} = \frac{v^2}{R}$$

$$a_{cp} = \frac{2^2}{1}$$

$$\therefore a_{cp} = 4 \text{ m/s}^2$$

$$b) \quad F_{Rcp} = m \cdot a_{cp}$$

$$F_{Rcp} = 0,1 \cdot 4$$

$$\therefore F_{Rcp} = 0,4 \text{ N}$$

$$c) \quad F_{Rcp} = T - P$$

$$F_{Rcp} = T - m \cdot g$$

$$0,4 = T - 0,1 \cdot 10$$

$$\therefore T = 1,4 \text{ N}$$

QUESTÃO 2

$$F_p + F_N = \frac{m v^2}{R} \Rightarrow m \cdot g = \frac{m v^2}{R}$$

$$\Rightarrow v^2 = g \cdot R \Rightarrow v^2 = 3,6 \cdot 10$$

$$\therefore v = 6 \text{ m/s}$$

QUESTÃO 3

$$x_{cm} = \frac{1 \cdot m + 2 \cdot m + 3 \cdot m + 4 \cdot m + 5 \cdot m}{\sum m}$$

$$x_{cm} = \frac{15 \text{ m}}{5 \text{ m}} \Rightarrow x_{cm} = 3 \text{ cm}$$

$$y_{cm} = \frac{2 \text{ m} + 4 \text{ m} + 4 \text{ m} + 4 \text{ m} + 6 \text{ m}}{5 \text{ m}}$$

$$y_{cm} = \frac{20 \text{ m}}{5 \text{ m}} \Rightarrow y_{cm} = 4 \text{ cm}$$

$$\therefore P_{cm} = (3, 4) \text{ cm}$$

## QUESTÃO 4

$$a) \tau_F = F \cdot \Delta s \cdot \cos \alpha$$

$$\tau_F = 50 \cdot 5 \cdot 0,5$$

$$\therefore \tau_F = 125 \text{ J}$$

$$b) \tau_{At} = F_{At} \cdot \Delta s \cdot \cos 180^\circ$$

$$\tau_{At} = 2 \cdot 5 \cdot (-1)$$

$$\therefore \tau_{At} = -10 \text{ J}$$

$$c) \tau_{FR} = \sum \tau$$

$$\tau_{FR} = 125 + (-10)$$

$$\therefore \tau_{FR} = 115 \text{ J}$$

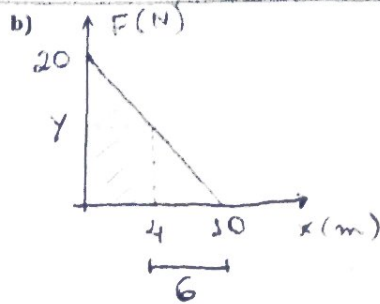
## QUESTÃO 5

a)

$$\tau_{10} \stackrel{N}{=} \text{Área} ; \text{Área} = \frac{B \cdot h}{2}$$

$$\tau_{10} \stackrel{N}{=} \frac{10 \cdot 20}{2}$$

$$\therefore \tau_{10} = 100 \text{ J}$$



Por proporcionalidade:

$$\frac{20}{10} = \frac{y}{6}$$

$$\Rightarrow y = 12$$

$$\tau_4 \stackrel{N}{=} \text{Área} ; \text{Área} = \frac{(B+b)h}{2}$$

$$\Rightarrow \tau_4 = \frac{(20+12) \cdot 4}{2}$$

$$\therefore \tau_4 = 64 \text{ J}$$

## QUESTÃO 6

$$a) E_{Pg} = m \cdot g \cdot h$$

$$E_{Pg} = \frac{500}{10000} \cdot 10 \cdot 10$$

$$\therefore E_{Pg} = 50 \text{ J}$$

$$b) E_c = \frac{m v^2}{2}$$

$$E_c = \frac{0,5 \cdot (15)^2}{2}$$

$$\therefore E_c = 56,25 \text{ J}$$