Zadaci – Drugi Njutnov zakon (prvi deo)

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1. Koliki je intenzitet sile koja deluje na telo mase 5kg i daje mu ubrzanje $2\frac{m}{s^2}$?

$m = 5 \ \text{kg}$

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

$F = ?$

F$= m \cdot a$

F$= 5 \ \text{kg} \cdot 2\frac{m}{s^2}$

F$= 10 \ \text{N}$

$N = kg \cdot \frac{m}{s^2}$

2. Na telo mase 2000 g deluje konstantna sila intenziteta 13N. Izračunaj ubrzanje tela.

$$m = 2000g = 2 \text{ kg}$$

$$F = 13N$$

$$a = ?$$

$$a = \frac{F}{m}$$

$$a = \frac{13N}{2 \text{ kg}}$$

$$a = 6,5 \frac{m}{s^2}$$

$$\frac{N}{kg} = \frac{kg \cdot \frac{m}{s^2}}{kg}$$

3. Koliku masu ima telo na koje deluje konstantna sila intenziteta 50 N i daje mu ubrzanje $10\frac{m}{s^2}$?
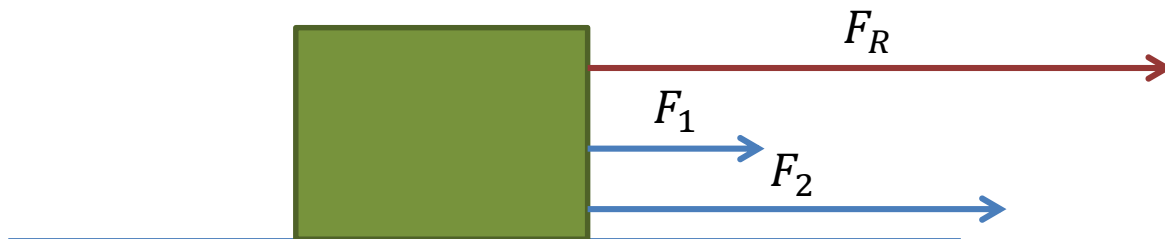
$F = 50\ \text{N}$

$a = 10\frac{m}{s^2}$

$m = ?$

$$m = \frac{F}{a}$$

$$m = \frac{50\text{N}}{10\frac{m}{s^2}}$$

$$m = 5kg$$

4. Na telo mase 2,5 kg deluju dve sile 10 N i 15 N kao na slici. Koliko je ubrzanje tela?

$$F_R = F_1 + F_2$$

$$F_R = 10N + 15N$$

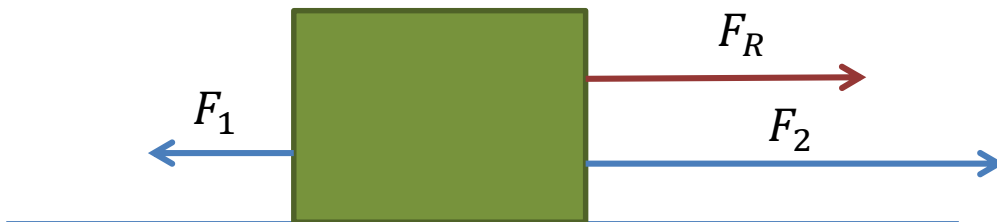$$F_R = 25N$$

$$m = 2,5 \text{ kg}$$

$$F_R = 25N$$

$$a = ?$$

$$a = \frac{F_R}{m}$$

$$a = \frac{25N}{2,5 \text{ kg}}$$

$$a = 10 \frac{m}{s^2}$$

5. Na telo deluju dve sile 5 N i 15 N kao na slici i daju mu ubrzanje $2\,\frac{m}{s^2}$.
Kolika je masa tela?

F_R

F_1

F_2

$$F_R = F_2 - F_1$$

$$F_R = 15N - 5N$$

$$F_R = 10N$$

a$= 2\,\dfrac{m}{s^2}$

$F_R = 10N$

$m =?$

$$m = \dfrac{F_R}{a}$$

$$m = \dfrac{10\ N}{2\,\dfrac{m}{s^2}}$$

$$m = 5\ kg$$