

Izvršite slijedeće zadatke:

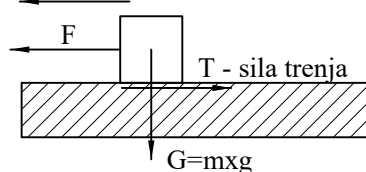
1) Za povlačenje tereta od $m = 800$ kg potrebna je sila od $F = 1\,400$ N. Koliki je koeficijent trenja μ ?

$$m = 800 \text{ kg}$$

$$F = 1\,400 \text{ N}$$

$$\mu = ?$$

tijelo se giba u lijevo



$$F = T$$

$$F = \mu \times G$$

$$F = \mu \times m \times g$$

$$1\,400 \text{ N} = \mu \times 800 \text{ kg} \times 10 \text{ m/s}^2 \quad | : 800 \times 10$$

$$\mu = \frac{1\,400}{800 \times 10} = \frac{1\,400}{8\,000}$$

$$\mu = 0,175$$

2) Automobil težak $m = 1\,000$ kg kreće se po asfaltu. Kolika je sila trenja T : a) po suhom kolniku ($\mu = 0,9$), b) po mokrom kolniku ($\mu = 0,45$)?

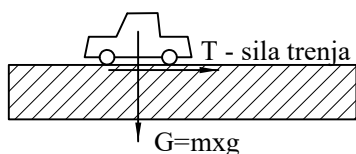
$$m = 1\,000 \text{ kg}$$

$$\mu_s = 0,9$$

$$\mu_m = 0,45$$

$$T = ?$$

tijelo se giba u lijevo



$$T = \mu \times G$$

$$T = \mu \times m \times g$$

$$T = \mu \times 1\,000 \text{ kg} \times 10 \text{ m/s}^2$$

$$T = \mu \times 10\,000 \text{ N}$$

a) suhi kolnik

$$T_s = \mu_s \times 10\,000 \text{ N}$$

$$T_s = 0,9 \times 10\,000 \text{ N}$$

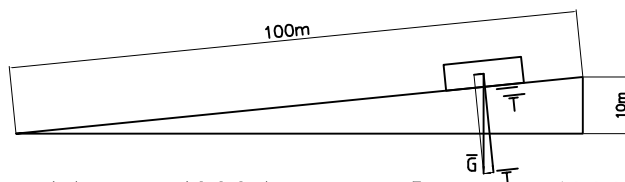
$$T_s = 9\,000 \text{ N}$$

b) mokri kolnik

$$T_m = \mu_m \times 10\,000 \text{ N}$$

$$T_m = 0,45 \times 10\,000 \text{ N}$$

$$T_m = 4\,500 \text{ N}$$

3) Automobil mase $m = 1\,000$ kg spušta se niz brijeg stalnom brzinom. Odredi silu trenja ako je nagib ceste 10%?

$$m = 1 \text{ tona} = 1\,000 \text{ kg} \longrightarrow G = m \times g = 1\,000 \text{ kg} \times 10 \text{ m/s}^2 = 10\,000 \text{ N}$$

$$\frac{10}{100} = \frac{F_{tr}}{G}$$

$$F_{tr} = \frac{G \times 10}{100} = \frac{10\,000}{10} = 1\,000 \text{ N}$$

DOMAĆA ZADAĆA:4.) Vlak težak 50 000 tona vozi po ravni. Kolika je sila trenja ako je koeficijent trenja $\mu = 0,03$?