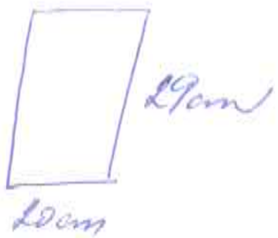
Řešení - tlak

1)



$S = a \cdot b$

$S = 20 \cdot 29$

$S = 580\ cm^2 = 0{,}058\ m^2$

$m = 0{,}2\ kg$

$F = m \cdot g$

$F = 2\ N$

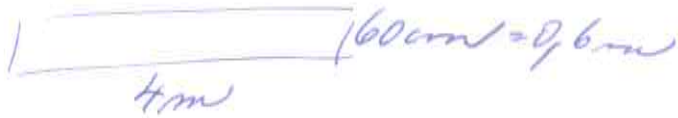
$p = ?\ Pa$

$p = \frac{F}{S}$

$p = \frac{2}{0{,}058} = 34{,}5\ Pa$

Učebnice působí tlakem 34,5 Pa

2) $m = 2{,}5\ t = 2\,500\ kg$



$S = a \cdot b$

$S = 4 \cdot 0{,}6 = 2{,}4\ m^2$

$F = m \cdot g$

$F = 25000\ N$

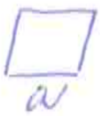
$p = !\ Pa$

$p = \frac{F}{S}$

$p = \frac{25\,000}{2{,}4} = 10\,417\ Pa = 10{,}4\ kPa$

Buldozer působí tlakem 10,4 kPa

3)



$S = a \cdot a$

$S = 35 \cdot 35 = 1225\ mm^2$

$S = 0{,}001225\ m^2$

$F = 12\,000\ N$

$p = \frac{12\,000}{0{,}001225} = 9\,795\,918\ Pa$

Tlak lisu je 9,8 MPa.

4) $m = 52\ kg$

$F = 520\ N$

$S = 12\ cm^2 = 0{,}0012\ m^2$

$p = !\ Pa$

$p = \frac{F}{S}$

$p = \frac{520}{0{,}0012} = 433\,333\ Pa = 433\ kPa$

Židle působí tlakem 433 kPa.

5) $S = 2,5\ m^2$

$p = 50\ kPa = 50\,000\ Pa$

$F = ?\ N$

$m = ?\ kg$

$F = p \cdot S$

$F = 50\,000 \cdot 2,5$

$F = 125\,000\ N$

$m = 125\,000 : 10$

$m = 12\,500\ kg = 12,5\ t$

Traktor působí silou 125 kN.

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6) $m = 30\ t = 30\,000\ kg$

$S = 0,008\ m^2$

$F = 300\,000\ N$

$p = ?\ Pa$

$$p = \frac{F}{S} = \frac{300\,000}{0,008} = 37,5\ MPa$$

Vagon působí tlakem 37,5 MPa.

Doporučené úlohy - Poměr

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