2.14.2 Respostas dos exercícios propostos

2.14.1.1

a) $F\mu = 523{,}39$ t

b) p = 363.782,73 - 5440 t

c) p = 343382,73 N/m²

2.14.1.2

F = 25.200 N

2.14.1.3

a) $p_F = 165.000$ N/m²

b) p_F abs = 195.705,45 N/m²

c) x = 13,99 m

2.14.1.4

L = 0,57 m

2.14.1.5 G ≅ 48 N

2.14.1.6

p = 15932,4 N/m²

2.14.1.7

$\Delta_H = 3{,}5$ cm²

2.14.1.8

G = 10,41 N

2.14.1.9

Sim, pois o vácuo absoluto seria correspondente a -99.000 N/m²

2.14.1.10

Seria a -9,2 mca

2.14.1.11

Sim, pois o vácuo corresponderia a -20,58 psi

2.14.1.12

Rar = 287 J/kg k

2.14.1.13

P atm. padrão = 101.336,27 N/m²

2.14.1.14

ρ = 2,293 kg/m³

2.14.1.15

ρ_2 = 1,40 kg/m³

2.14.1.16

p_{715} = 0,918 atm.

ρ_{715} = 1,144 kg/m³

2.14.1.17

Z ≅ 3134 m

2.14.1.18

p = 0,235 atm.

θ = 218,7 K

ρ = 0.379 kg / m^3

2.14.1.19

$$p = 101.336,27 \cdot \left(\frac{288 - 0,0065\,Z}{288}\right)^{\frac{g}{0,0065\,Rar}}$$

2.14.1.20

$$p = 101.336,26 \cdot \left(\frac{288 - 0,0065\,Z}{288}\right)^{5,259}$$

2.14.1.21

Obtemos respostas praticamente iguais as obtidas nos exercícios 2.14.1.16 e 2.14.1.17.

2.14.1.22

$p_{1500} = 0{,}119$ atm.

$\theta_{1500} = 218{,}7$ K

$\rho_{1500} = 0{,}192$ kg/m³

2.14.1.23

a) $P_{gás} = 2800$ N/m²

b) $P_{gás\ (abs)} = 9805{,}42$ kgf/m²

2.14.1.24

x = 0,8 m

2.14.1.25

a) $P_{gás} = 0$

b) $P_{gás\ (abs)} = 9{,}5$ mca

2.14.1.26

$P_{gás\ 1\ (abs)} = 32000$ kgf/m²

2.14.1.27

$p_2 = 7{,}76 \times 10^{4}$ N/m²

2.14.1.28

G = 60105,6 kgf

2.14.1.29

a) h = 2 m

b) G = 3,75 kgf

c) $p_{gás\ B} = 1500$ kgf/m²

2.14.1.30

$p_{ar\ 1} = 380\ kgf/m^2$

2.14.1.31

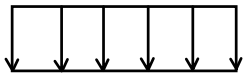
$p_{ar} = 3600\ N/m^2$

$p_{ar\ (abs)} = 96910\ N/m^2$

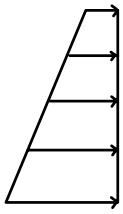
$p_m = 33.600\ N/m^2$

2.14.1.32

a)



b)



2.14.1.33

a) $p_{ar\ 3} = 6,8$ mca

b) $p_{ar\ 2} = 5,67 \times 10^{4}\ N/m^2$

c) Ge = 1,0 kgf

2.14.1.34

a) $p_A = 13020,51\ kgf/m^2$

b) $p_{A\ (abs)} = 16516,07\ kgf/m^2$

2.14.1.35

$p_A - p_B = 2550\ N/m^2$