

Radiaco solar
(resoluoo teste 2023)

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a) V

b) F

c) F

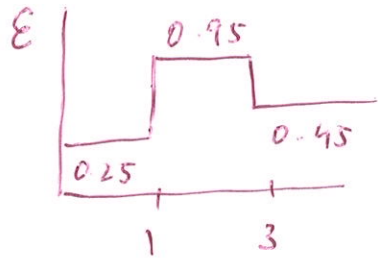
d) F

e) F

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$$T_p = 180^\circ\text{C} = 453 \text{ K}$$

$$T_F = 300^\circ\text{C} = 633 \text{ K}$$



a) emissividade da pizza?

$$\lambda_1 T = 1 \times 453 = 453 \rightarrow F_1 = 0$$

$$\lambda_2 T = 3 \times 453 = 1359 \rightarrow F_3 = 0.008$$

$$\epsilon = 0.25 \times 0 + 0.95 (0.008 - 0) + 0.45 \times (1 - 0.008)$$

$$\epsilon \sim 0.45$$

b) absorvidade da pizza?

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$$\alpha_1 = \epsilon_1$$

$$\lambda_1 T = 1 \times 633 = 633 \rightarrow F_1 = 0$$

$$\lambda_3 T = 3 \times 633 = 1899 \rightarrow F_3 \sim 0.05$$

$$\alpha = 0.25 \times 0 + 0.95(0.05 - 0) + 0.45 \times (1 - 0.05)$$

$$\alpha = 0.475 \text{ (quase igual à emissividade!)}$$

c) refletividade da pizza?

$$\rho = 1 - \alpha$$

$$\rho = 1 - 0.475 = 0.525$$

d) fluxo total de radiações?

$$G = \alpha \sigma T_f^4 + \epsilon \sigma T_p^4$$

$$G = 0.475 \times 5.67 \times 10^{-8} \times 633^4 + 0.45 \times 5.67 \times 10^{-8} \times 453^4$$

$$G = 3.2 \times 10^3 \text{ W/m}^2$$

$$G = 3.2 \text{ kW/m}^2$$