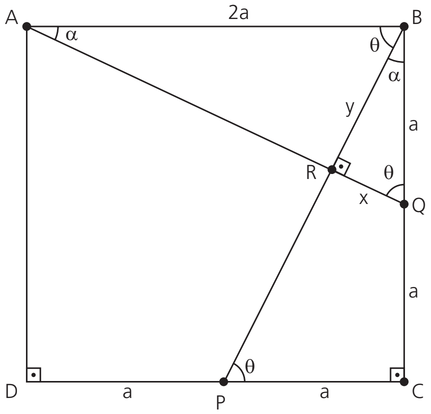
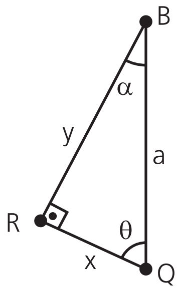
01.

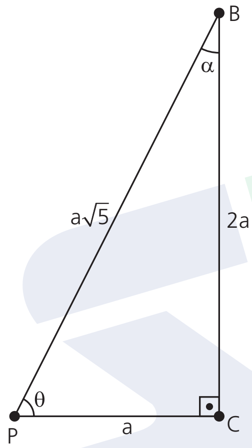


De acordo com o enunciado, temos:

$\Delta BCP \equiv \Delta ABQ$ (L · A · L)

Então:





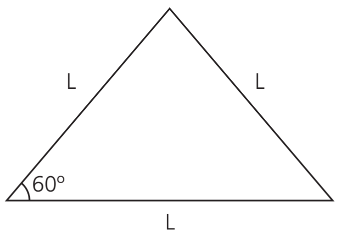
$$\Delta BRQ \sim \Delta BCP \rightarrow \frac{x}{a} = \frac{y}{2a} = \frac{a}{a\sqrt{5}} \rightarrow x = \frac{a}{\sqrt{5}} \text{ e } y = \frac{2a}{\sqrt{5}}, \text{ com } 2a = \frac{1}{2} \text{ km, isto é, } a = \frac{1}{4} \text{ km}$$

Logo:

$$\text{Área (destacada)} = \frac{x \cdot y}{2} = \frac{a^2}{5} = \frac{1}{80} \text{ km}^2$$

Resposta: E

02. De acordo com o enunciado, temos:



$$\text{Área}(\Delta) = \frac{L^2\sqrt{3}}{4} = 1{,}275 \cdot 10^6 \text{ km}^2$$

Então:

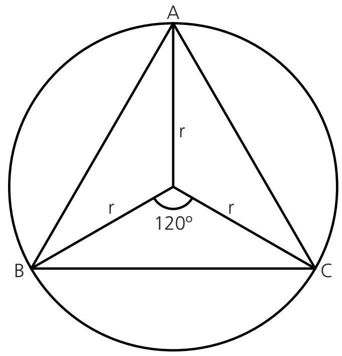
$L^2 = 3 \cdot 10^6 \rightarrow L = 10^3 \cdot \sqrt{3}$ km

Logo:

L = 1700 km

Resposta: D

03. Diante do exposto, temos:



$$[ABC] = 3 \cdot \left(\frac{r \cdot r \cdot \text{sen } 120^\circ}{2}\right) = \frac{3\sqrt{3} \cdot r^2}{4} = 27\sqrt{3} \to r = 6 \text{ cm.}$$

Resposta: C

04.

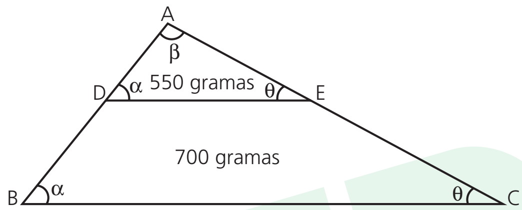
I. Densidade superficial = $\frac{\text{massa}}{\text{Área}}$

Daí,

$$\frac{550}{[ADE]} = \frac{1250}{[ABC]} \to \frac{[ADE]}{[ABC]} = \frac{11}{25}$$

II. Semelhança ($\Delta ADE \sim \Delta ABC$) daí,

$$\frac{[ADE]}{[ABC]} = \left(\frac{AD}{AB}\right)^2 = \frac{11}{25}$$



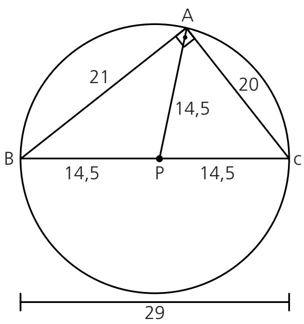
Logo:

$$\frac{AD}{AB} = \frac{\sqrt{11}}{5} \simeq 0{,}664$$

Resposta: D

05. Primeira Solução

De acordo com o enunciado, temos:



Observe que: $20^2 + 21^2 = 29^2 \to$ Terna Pitagórica

Logo:

AP = 14,5 km

Segunda Solução

Temos que:

Área do $\Delta ABC = \sqrt{p \cdot (p-a) \cdot (p-b) \cdot (p-c)} = p \cdot r$, onde r = AP(raio)

Substituindo os valores, encontramos:

r = AP = 14,5 km.

Resposta: E

Anderson – 14/12/15 – REV.: AC
09318815_fix_Aula14 - Áreas dos Triângulos