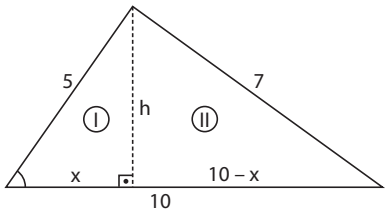
Exercícios de casa resolvidos

Extensivo – Caderno 3 – Matemática III

Aula 12 – Página 232

4.



$$\begin{cases} 5^2 = x^2 + h^2 \ \text{(I)} \\ 7^2 = h^2 + (10 - x)^2 \ \text{(II)} \end{cases}$$

$$24 = 100 - 20x + x^2 - x^2$$

$$20x = 76$$

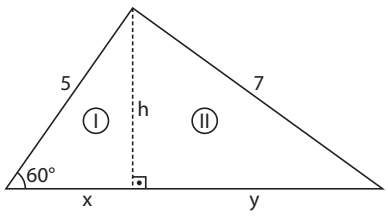
$$x = \frac{19}{5} \text{ e } h = \frac{2\sqrt{66}}{5}$$

$$S = \frac{b \cdot h}{2} = \frac{10 \cdot \frac{2\sqrt{66}}{5}}{2} = 2\sqrt{66}$$

Resposta do item B: $2\sqrt{66}$

Página 233

9.



(I)

$$\text{sen } 60° = \frac{h}{5} \qquad \cos 60° = \frac{x}{5}$$

$$h = \frac{5\sqrt{3}}{2} \qquad x = \frac{5}{2}$$

(II)

$$7^2 = h^2 + y^2$$

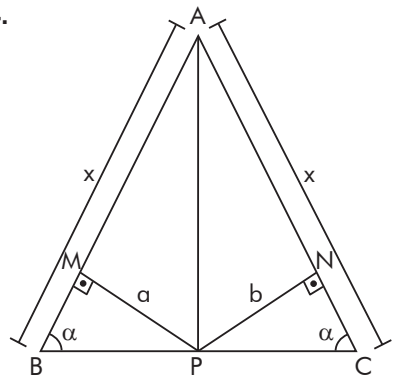
$$y = \frac{11}{2}$$

$$S = \frac{(x + y) \cdot h}{2} = \frac{\left(\frac{11}{2} + \frac{5}{2}\right) \cdot \frac{5\sqrt{3}}{2}}{2} = 10\sqrt{3}$$

Resposta: C

Página 235

4.



$$\frac{a \cdot x}{2} + \frac{b \cdot x}{2} = 10$$

$$\frac{x}{2}(a + b) = 10$$

$$\frac{4x}{2} = 10$$

$$x = 5$$

Resposta: C

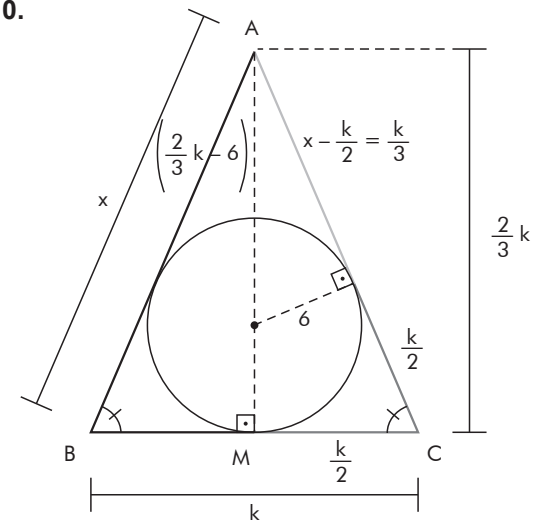
Página 236

7. $A = \frac{1}{2} a \cdot b \cdot \underbrace{\operatorname{sen}\alpha}_{\substack{\text{máximo} \\ \operatorname{sen}\alpha = 1}} = \frac{1}{2} \cdot 8 \cdot 8 \cdot 1 = 32$

Resposta: A

Tangências – Página 240

10.



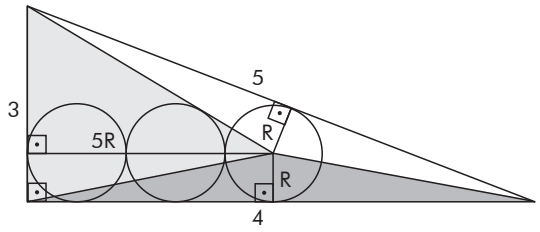
$$x^2 = \left(\frac{k}{2}\right)^2 + \left(\frac{2}{3}k\right)^2$$

$$x = \frac{5}{6}k$$

$$\left(\frac{2}{3}k - 6\right)^2 = 6^2 + \left(\frac{k}{3}\right)^2 = 24$$

Resposta: D

14.

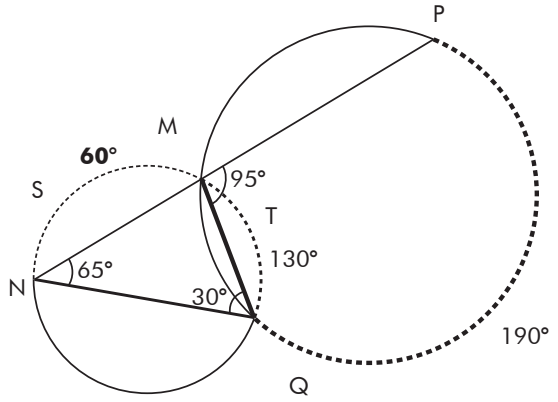


$$\frac{3 \cdot 4}{2} = \boxed{\frac{3 \cdot 5R}{2}} + \boxed{\frac{4 \cdot R}{2}} + \frac{5 \cdot R}{2} \qquad R = 0{,}5$$

Resposta: A

Página 243

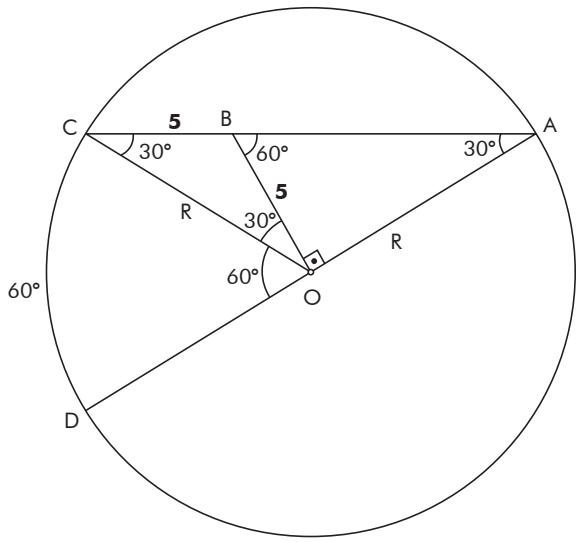
6.



Resposta: A (60°)

Página 244

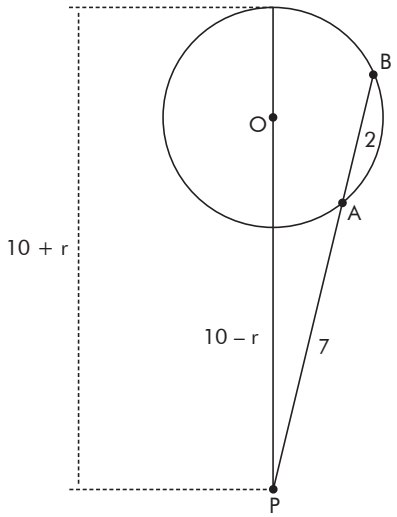
9.



Resposta: D (5)

Página 247

6.



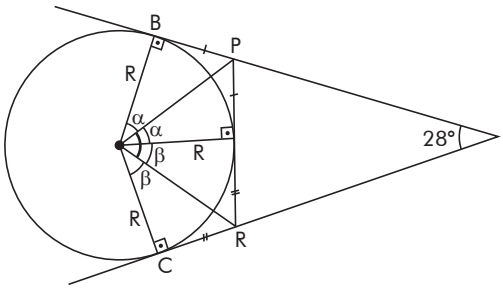
$7 \cdot (7 + 2) = (10 - r) \cdot (10 + r)$

$63 = 100 - r^2$

$r = \sqrt{37}$

Resposta: A

9.



$2\alpha + 2\beta + 90° + 90° + 28° = 360°$

$\alpha + \beta = 76°$

Resposta: E