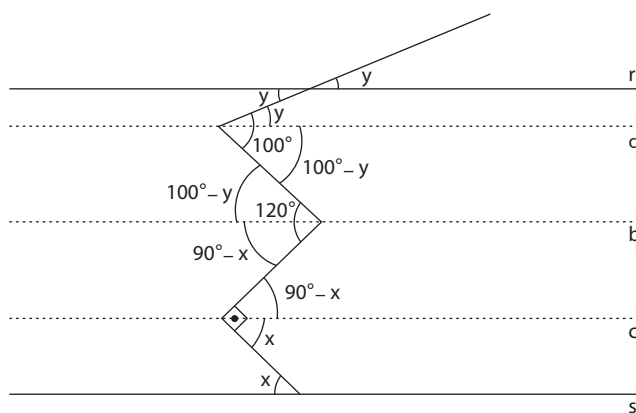


Exercícios de casa resolvidos

Extensivo — Caderno 1 – Matemática III

Aula 1 – Página 207

10.

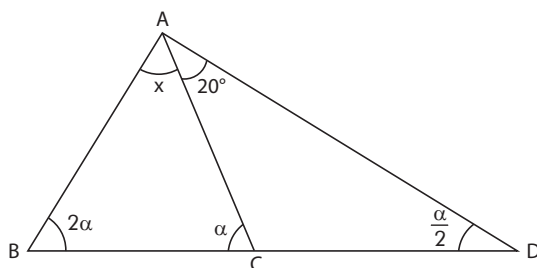


$r // a // b // c // s$
 $100^\circ - y + 90^\circ - x = 120^\circ$
 $70^\circ = x + y$

Resposta: B

Aula 2 – Página 210

11.



α é externo do $\triangle ACD$

$$\alpha = 20^\circ + \frac{\alpha}{2}$$

$$2\alpha = 40^\circ + \alpha$$

$$\alpha = 40^\circ$$

$\triangle ABC$

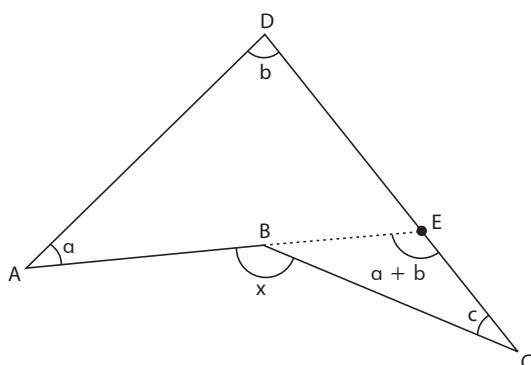
$$2\alpha + \alpha + x = 180^\circ$$

$$80^\circ + 40^\circ + x = 180^\circ$$

$$x = 60^\circ$$

Resposta: D

14.



Prolongar o segmento \overline{AB} no sentido de A para B determinando o ponto E em \overline{DC} .

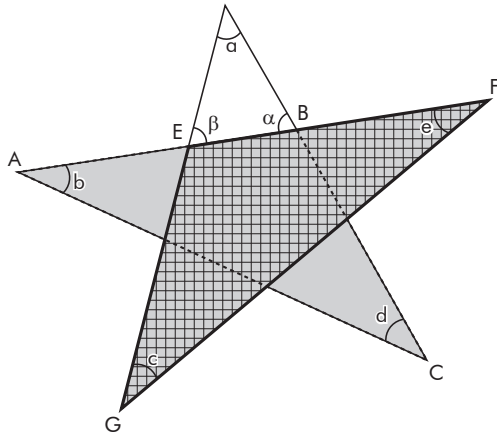
O ângulo $\hat{B}EC$ é externo do $\triangle ADE$, logo $med(\hat{B}EC) = a + b$.

O ângulo x é externo do $\triangle BCE$, então a medida x é igual a $a + b + c \therefore x = a + b + c$

Resposta: D

Aula 2 – Página 210

15.



Tomamos como α o ângulo externo do $\triangle ABC$, então $\alpha = b + d$.

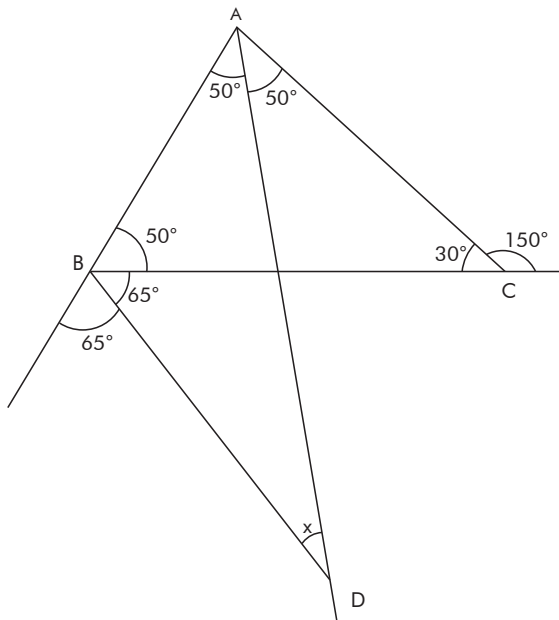
E β o ângulo externo do $\triangle EFG$, então $\beta = c + e$.

Como $a + \beta + \alpha = 180^\circ$, então $a + c + b + d + e = 180^\circ$

Resposta: D

Aula 3 – Página 213

4.



$\triangle ABD$

$$50^\circ + 50^\circ + 65^\circ + x = 180^\circ$$

$$x = 15$$

Resposta: B

Aula 3 – Página 213

6. $\frac{\hat{A}}{5} = \frac{\hat{B}}{7} = \frac{\hat{C}}{8}$

$$\hat{A} + \hat{B} + \hat{C} = 180^\circ$$

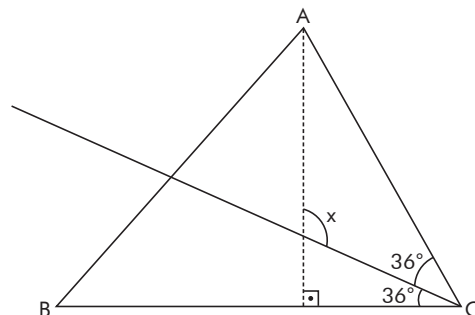
$$5k + 7k + 8k = 180^\circ$$

$$k = 9^\circ$$

$$\therefore \hat{A} = 45^\circ, \hat{B} = 63^\circ \text{ e } \hat{C} = 72^\circ$$

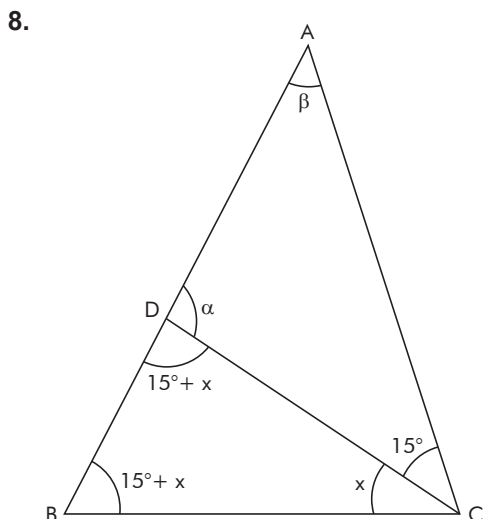
$$x = 36^\circ + 90^\circ$$

$$x = 126^\circ$$



Resposta: D

Aula 3 – Página 215



$$\Delta BCD \quad 15^\circ + x + 15^\circ + x + x = 180^\circ$$

$$x = 50^\circ$$

$$15^\circ + x + \alpha = 180^\circ$$

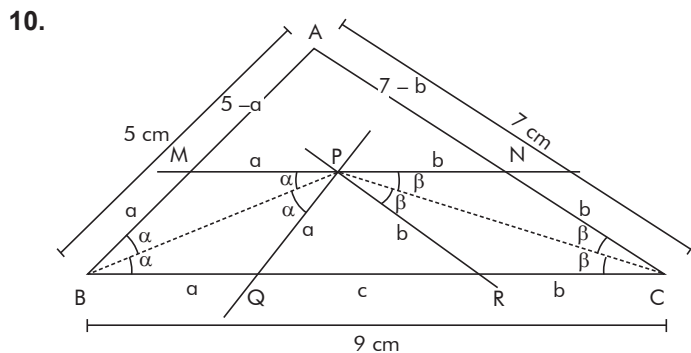
$$\alpha = 115^\circ$$

$$\Delta ACD \quad 15^\circ + \alpha + \beta = 180^\circ$$

$$\beta = 50^\circ$$

$$\alpha - \beta = 65^\circ$$

Resposta: D



\overline{BP} e \overline{CP} são bissetrizes. Como $MN \parallel BC$, $PQ \parallel MB$ e $PR \parallel NC$, temos ângulos alternos internos (Zorro). Logo, os quadriláteros $BMPQ$ e $CNPR$ são losangos (lados congruentes).

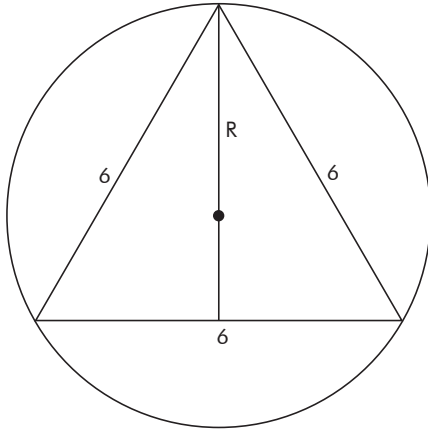
Razão entre os perímetros (2p):

$$\frac{2p_{AMN}}{2p_{PQR}} = \frac{5 - a + a + b + 7 - b}{\underbrace{a + b + c}_{\text{med}(BC) = 9}} = \frac{12}{9} = \frac{4}{3}$$

Resposta: D

Aula 5 – Página 217

9.



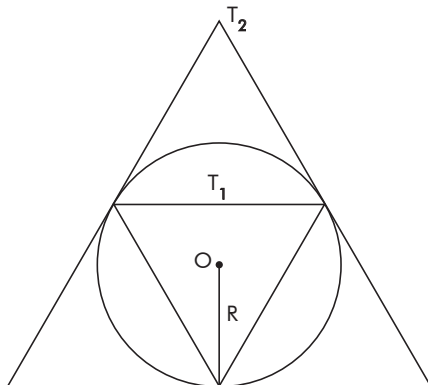
$$R = \frac{2}{3} h$$

$$R = \frac{\cancel{2}}{3} \cdot \frac{6\sqrt{3}}{\cancel{2}}$$

$$R = 2\sqrt{3}$$

Resposta: B

10.



$$\Delta T_1 \quad R = \frac{2}{3} h_1 \quad \text{e} \quad \Delta T_2 \quad R = \frac{1}{3} h_2$$

$$h_1 = \frac{3}{2} R$$

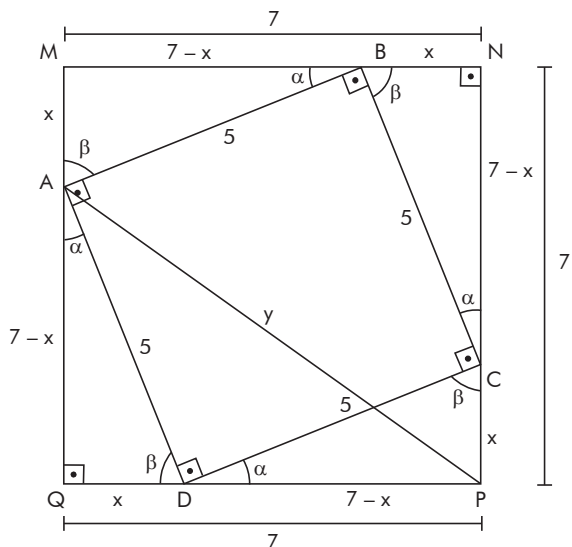
$$h_2 = 3R$$

$$\frac{h_2}{h_1} = \frac{3R}{\frac{3R}{2}} = 2$$

Resposta: E

Aula 6 – Página 220

9.

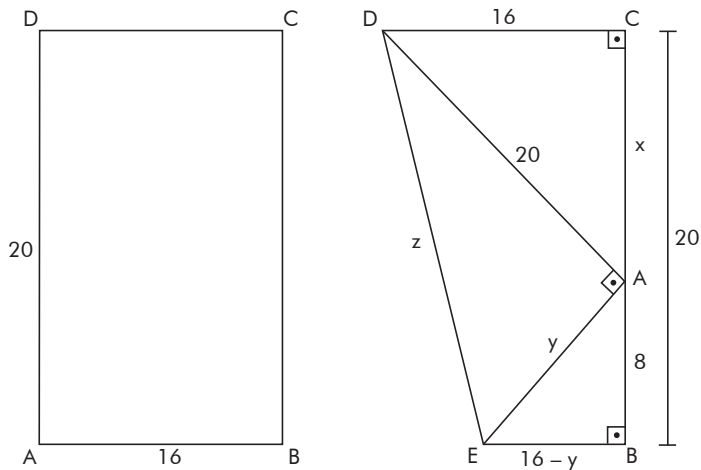


ΔABM
 $(5)^2 = x^2 + (7-x)^2$
 $x^2 - 7x + 12 = 0$
 $x_1 = 3$
 $x_2 = 4$

ΔAPQ
 $x = 3$
 $y^2 = 4^2 + 7^2$
 $y = \sqrt{65}$

Resposta: D

10.



ΔACD
 $20^2 = 16^2 + x^2$
 $x = 12$

ΔABE
 $y^2 = 8^2 + (16-y)^2$
 $y = 10$

ΔADE
 $z^2 = y^2 + 20^2$
 $z = 10\sqrt{5}$

Resposta: A