

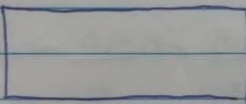
Nome: Ysmael Amed Fonseca Machado
Prof(a): Fernando
Turma: COINF 2026
Disciplina: Matemática 5

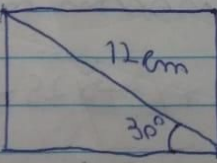
Lista de Matemática 5 (como avaliação)

Número 1

Nome: Ysmael Amed Fonseca Machado 26/06/19
Prof: Fernando Turma: COINF 2026

Exercícios Introdutórios

1-a)  4 cm $A = l \cdot l$
 $A = 4 \cdot 8 \rightarrow A = 32 \text{ cm}^2$
 8 cm

b)  6 12 cm 30°
 $6\sqrt{3}$

$\cos 30^\circ = \frac{\text{cat}}{\text{hip}} \rightarrow \frac{\sqrt{3}}{2} = \frac{x}{12} \rightarrow 12\sqrt{3} = 2x$
 $\rightarrow x = 6\sqrt{3}$

$\tan 30^\circ = \frac{\text{cat}}{\text{hip}} \rightarrow \frac{1}{\sqrt{3}} = \frac{6}{x} \rightarrow 2x = 12$
 $x = 6$

$A = 6 \cdot 6\sqrt{3} \rightarrow 36\sqrt{3} \text{ cm}^2$

Número 2 e 3 A

$6\sqrt{3}$ $\text{Dem } 30^\circ = 60 \rightarrow \frac{1}{2}x \rightarrow 2x = 12$
hip 2×12
 $A = 6 \cdot 6\sqrt{3} \rightarrow 36\sqrt{3} \text{ cm}^2$

$x = 6$

2- a) lado mede 8 cm
 $A = 8 \cdot 8 \rightarrow 64 \text{ cm}^2$

b) lado mede 7,1 cm
 $A = 7,1 \cdot 7,1 \rightarrow 50,41 \text{ cm}^2$

c) lado mede $\sqrt{3}$ cm
 $A = \sqrt{3} \cdot \sqrt{3} \rightarrow A = 3 \text{ cm}^2$

d) diagonal mede 6 cm
 $\text{Dem } 45^\circ = 60 \rightarrow \frac{\sqrt{2}}{2}x \rightarrow x = 3\sqrt{2}$
hip 2×6
 $A = 3\sqrt{2} \cdot 3\sqrt{2} \rightarrow 9 \cdot \sqrt{4} \rightarrow 9 \cdot 2 \rightarrow 18 \text{ cm}^2$

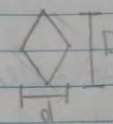
3- a) 25 cm^2
 $\sqrt{25} \rightarrow 5 \text{ cm}$

tilibra

Número 3 B e 4

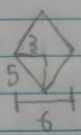
1- 12 cm^2
 $\sqrt{12} \rightarrow 2\sqrt{3} \text{ cm}$

4-a) diagonais medem 5 cm e 8 cm



$$A = \frac{D \cdot d}{2} \rightarrow \frac{8 \cdot 5}{2} = 20 \text{ cm}^2$$

b) lado mede 5 cm e diagonais medem 6 cm

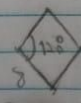


$$5^2 = 3^2 + x^2 \rightarrow 25 = 9 + x^2 \rightarrow 25 - 9 = x^2$$

$$\rightarrow x = 4 \quad (D = 8)$$

$$A = \frac{8 \cdot 6}{2} = 24 \text{ cm}^2$$

c) lado mede 8 cm e um dos ângulos internos mede 120°



$$\cos 60^\circ = \frac{hip}{hip} \rightarrow \frac{1}{2} = \frac{x}{8} \rightarrow 2x = 8$$

$$\rightarrow x = 4 \rightarrow d = 8$$

$$A = \frac{D \cdot d}{2} = \frac{8 \cdot 8}{2} = 32 \text{ cm}^2$$

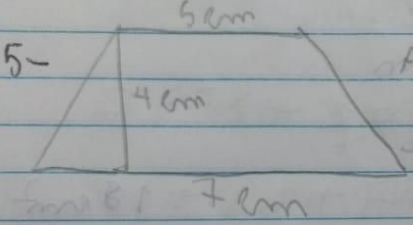
Número 5

$A = \frac{D \cdot d}{2} \rightarrow x = 4 \rightarrow d = 8$

$A = \frac{8 \cdot 8}{2} = 32 \text{ cm}^2$

$A = \frac{8 \cdot 8}{2} = 32 \text{ cm}^2$

5-



$$A = \frac{(B + b) \cdot h}{2} \rightarrow A = \frac{(7 + 5) \cdot 4}{2}$$

$$A = 12 \cdot 2 \rightarrow A = 24 \text{ cm}^2$$

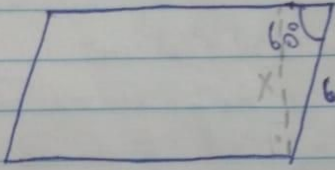
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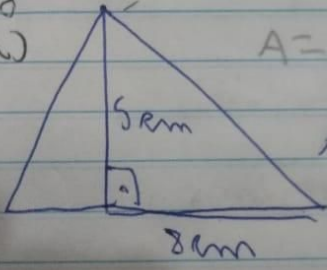
Número 6, 7 e 8 A

6 → 6

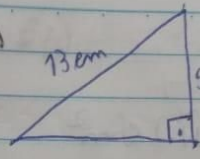
6cm

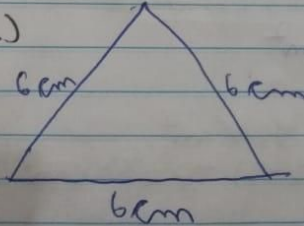
$c^2 = 2^2 + 2^2 + 2^2 + 2^2 + 2^2 + 2^2 + 2^2 + 2^2$

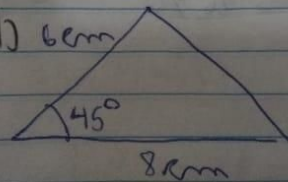
17)  $\text{sen } 60^\circ = \frac{60}{100} = \frac{x}{6}$
 $\text{hip } 2 \quad 6$
 $\rightarrow 2x = 6\sqrt{3} \rightarrow x = 3\sqrt{3}$
 $A = b \cdot h \rightarrow 8 \cdot 3\sqrt{3} = 24\sqrt{3} \text{ cm}^2$

8 → 8
 a) 
 $A = \frac{b \cdot h}{2} = \frac{8 \cdot 5}{2} = 20$
 $A = 20 \text{ cm}^2$

Número 8 B, C E D

17) 
 $13^2 = 5^2 + x^2 \rightarrow 169 = 25 + x^2 \rightarrow x = 12$
 $A = \frac{b \cdot h}{2} = \frac{5 \cdot 12}{2} = 30$
 $A = 30 \text{ cm}^2$

c) 
 $P = 6 + 6 + 6 \rightarrow P = 18$
 $A = \frac{9 \cdot 3 \cdot 3 \cdot 3}{4} = 243 \text{ cm}^2$

d) 
 $6 \cdot 0 \cdot \text{sen } 45 = 12\sqrt{2} \text{ cm}^2$

Número 9

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$$p - p = 72 \text{ cm} \quad \text{Lado} = \frac{72}{4} = 18 \text{ cm}$$
$$A = 18^2 = 324 \text{ cm}^2$$

Número 10, 11 e 12 A

8 cm

Exercícios de função

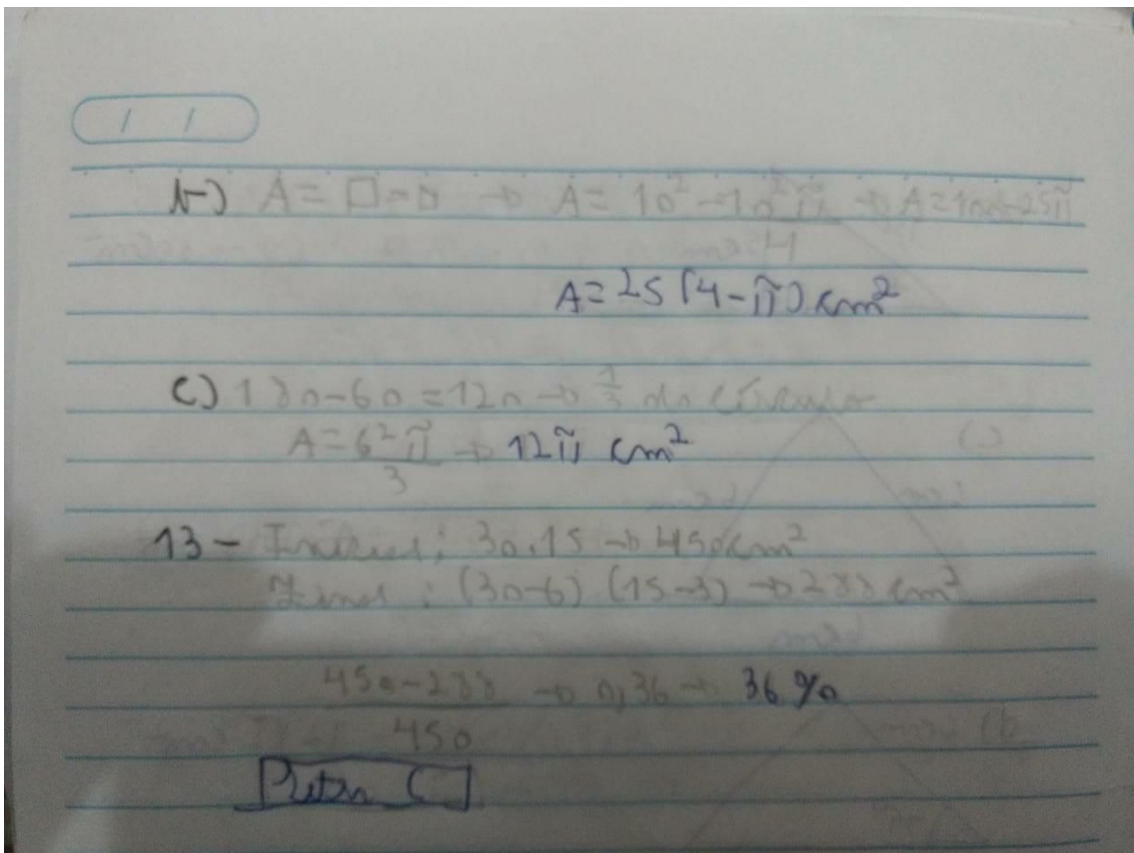
$$10 - h = \frac{A}{2} \quad A = A \cdot h \rightarrow 450 = A \cdot h \rightarrow 450 = h^2$$
$$h = 30 \rightarrow \boxed{h = 15 \text{ cm}} \quad \rightarrow \sqrt{900} = h \rightarrow \boxed{h = 30 \text{ cm}}$$
$$11 - 10 \cdot 10 \rightarrow \sqrt{100} \rightarrow 10$$

10% de 100 = 10

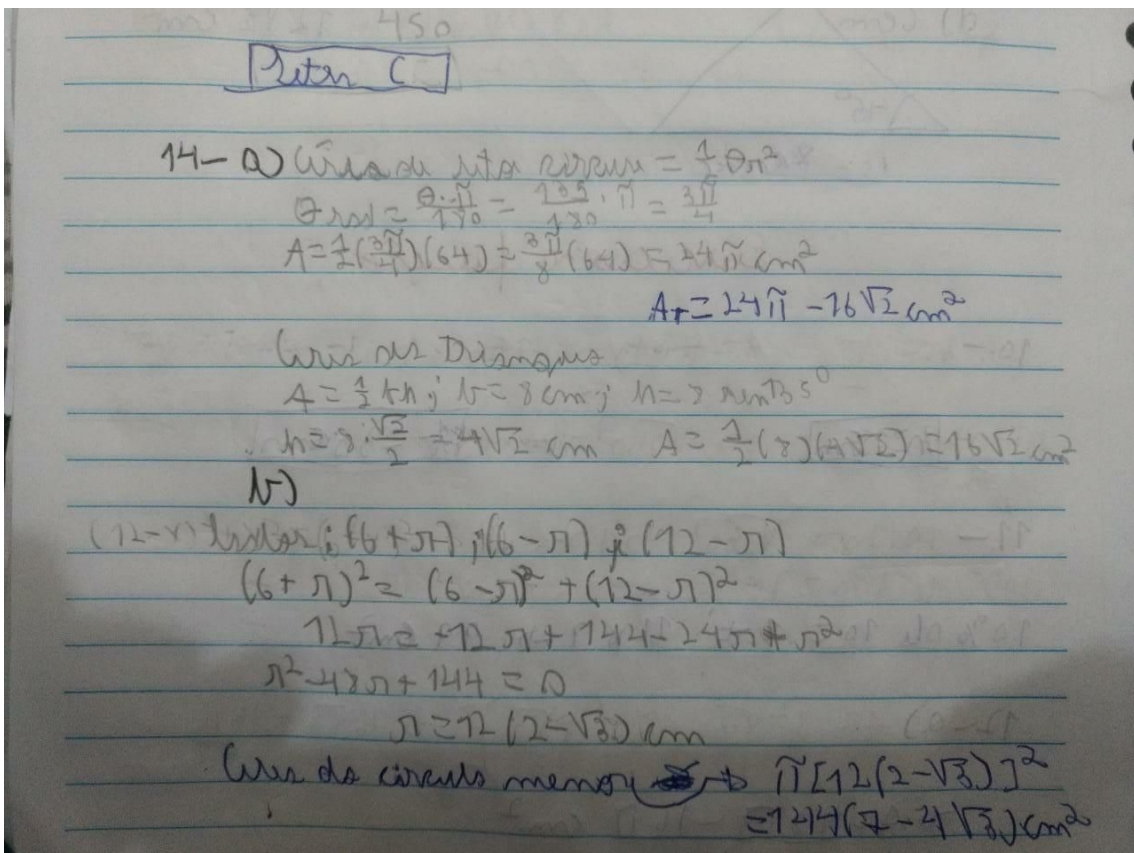
10% de 10 = 1 $\rightarrow 11 \times 9 \rightarrow 99 \text{ cm}^2$

$$12 - a) A = 8^2 \sqrt{3} - \pi \cdot \left(4\sqrt{3}\right)^2 \rightarrow 76\sqrt{3} - 16\pi$$
$$\rightarrow A = 43\sqrt{3} - 16\pi \text{ cm}^2$$

Número 12 B e C e 13



Número 14



Número 14 C e 15

11

C) $A = 2 \left(\frac{4 \cdot \pi}{3} - \frac{4 \cdot 4 \cdot \sin(120^\circ)}{2} \right)$

$A = 2 \left(\frac{16\pi}{3} - 4\sqrt{3} \right)$

$A = 4 \left(\frac{8\pi}{3} - 2\sqrt{3} \right) \text{ cm}^2$

15 - Área do hexágono = $3 \cdot 5 = 15$

Área do retângulo = $(5-x)(3-y) = 15 - 5y - 3x + xy$

$15 - (15 - 5y - 3x + xy) = 5y + 3x - xy$

Letra E

Número 16 e 17

$15 - (15 - 5y - 3x + xy) = 5y + 3x - xy$

Letra E

16 - $\Delta BPD = \Delta BDP - \Delta PDB \rightarrow \frac{1}{2} \cdot \frac{1}{2} - \frac{1}{2} \cdot \frac{1}{4} + \frac{1}{4} - \frac{1}{8}$

$\rightarrow \frac{1}{8} \text{ m}^2$

$\frac{1}{4} \cdot 50 + \frac{3}{4} \cdot 30 \rightarrow 12,50 + 22,50$

$\rightarrow 35,00 \text{ reais}$

$2 \cdot \frac{1}{8} \rightarrow \frac{1}{4} = 1 \rightarrow \frac{3}{4}$

Letra B

17 - $h = \frac{\sqrt{3}}{2}$ $\Delta EFG-h = 1 + \sqrt{3}$ (desenvolvendo)

$A = \frac{(1 + \sqrt{3})^2}{2} \rightarrow A = 2 + \sqrt{3}$

Letra C

4

Número 18 e 19

18 - a) Área $\square EFGH = 4 + 4 \cdot \frac{3}{2} \rightarrow 4 + 6 = 10$ quadrados de lado.

$$\frac{\text{Área} = 10}{16} \rightarrow \frac{\text{Área} = 5}{8}$$

b) $A = \square EFGH \rightarrow 4 \cdot \frac{5}{2} \rightarrow 25 \text{ cm}^2$
 $\rightarrow h = 5 \text{ cm}$

19 - a) $\frac{2 \cdot x}{2} = 8 \rightarrow 100 - 4 \cdot x = 63 \text{ m}^2$

b) $100 - 4 \cdot x(10 - x) = 2x^2 - 20x + 100 \text{ m}^2$

c) $3 \cdot 100 + 1 \cdot (2x^2 - 20x + 100) = 2x^2 - 20x + 400$
 Área total $\rightarrow 2x^2 - 20x + 200 = 2(x - 5)^2 + 350$
 $= 0^2 + 350$
 $x = 5$ R: Pelo menos 150 reais $= 350$

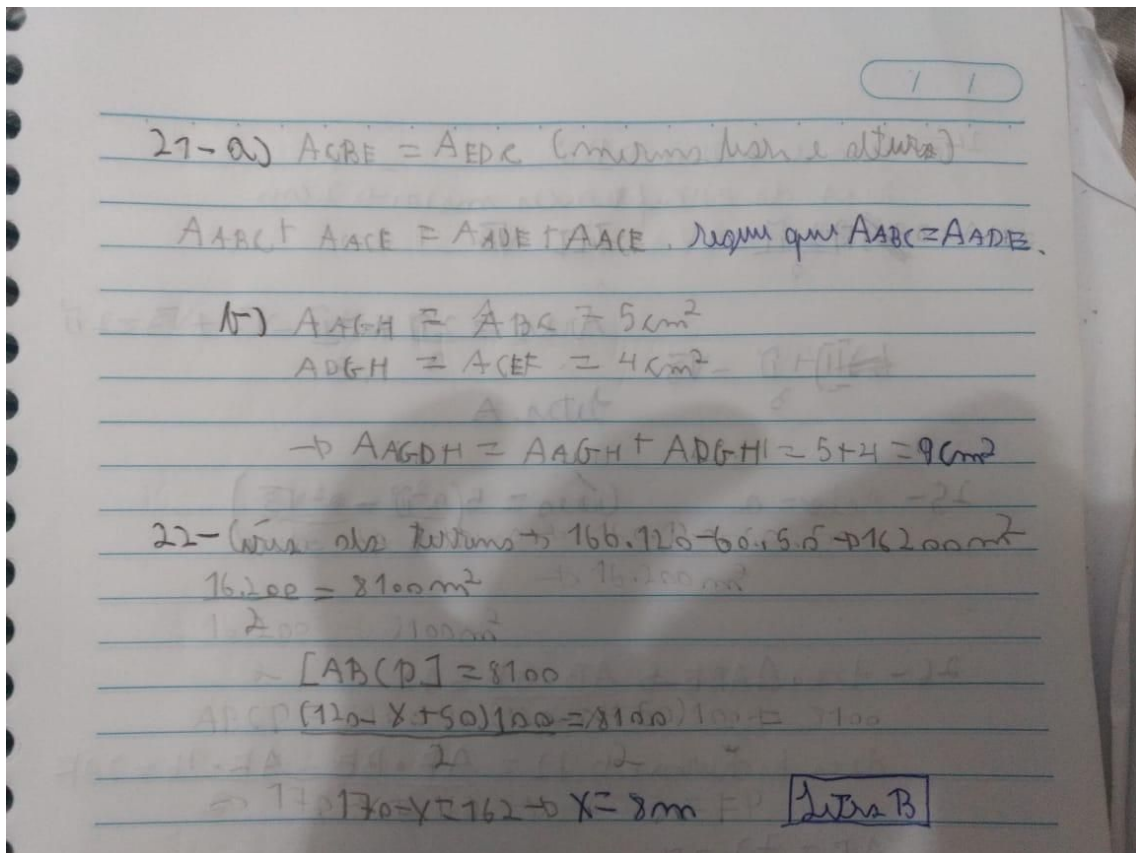
Número 20

c) $3 \cdot 100 + 1 \cdot (2x^2 - 20x + 100) = 2x^2 - 20x + 400$
 Área total $\rightarrow 2x^2 - 20x + 200 = 2(x - 5)^2 + 350$
 $= 0^2 + 350$
 $x = 5$ R: Pelo menos 150 reais $= 350$

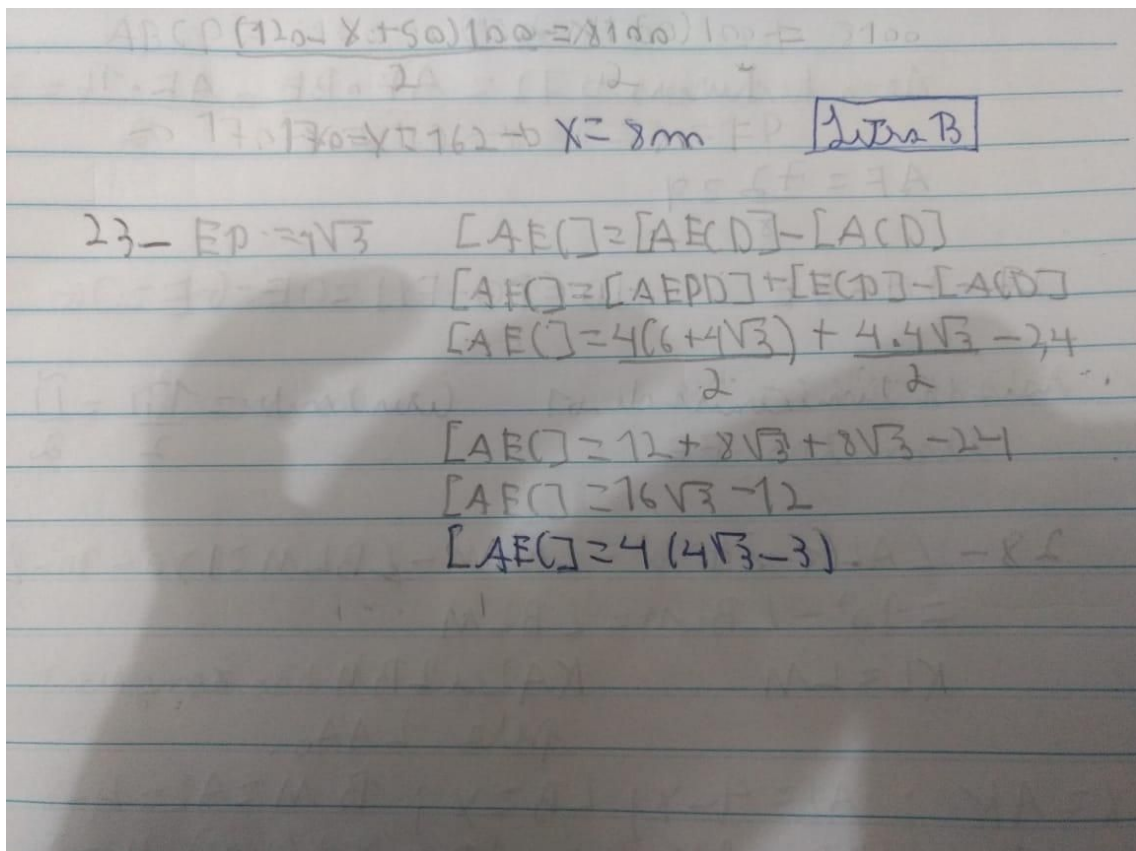
20 - Área dos Triângulos $\rightarrow 8 \text{ m}^2 + 17 \text{ m}^2$
 $24 + 8 + 17 \rightarrow 50 \text{ m}^2 \rightarrow 100 \text{ m}^2$ Pelo D
 Retângulo

$x = 5$ R: Pelo menos 150 reais

Número 21 e 22



Número 23



Número 24, 25 e 26

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24 - Ângulo central $\rightarrow 120^\circ$
 Raio de referência maior $\rightarrow 2\sqrt{3}$

~~$\frac{2\sqrt{3}}{3}$~~ $\frac{4\sqrt{3}}{3}$ $\frac{4\sqrt{3}}{3}$ $\sqrt{3}$

~~$\frac{4\sqrt{3}}{3}$~~ $\frac{4\sqrt{3}}{3}$ $-\sqrt{3}$

Áreas $= \frac{2\sqrt{3}}{3} + \frac{4\sqrt{3}}{3} - \sqrt{3} + \sqrt{3} = 2\sqrt{3}$

Área A

25 - raio = a $\text{Área} = 5\left(\frac{a^2\sqrt{3}}{6} - \frac{a^2\sqrt{3}}{4}\right)$

26 - Área $\triangle ADE \rightarrow \frac{AB \cdot GE}{2} = 72$

Área hexágono $\rightarrow 72 = \frac{AF \cdot BE}{2} - \frac{AF \cdot GE}{2} = 2AF$

$AF = \frac{72}{2} = 36$

Número 27 e 28

Área hexágono $\rightarrow 72 = \frac{AF \cdot BE}{2} - \frac{AF \cdot GE}{2} = 2AF$

$AF = \frac{72}{2} = 36$

$LF = FH = GE$ $HO = FO - FH = OE - GE = OG$

raio de referência de $\rightarrow 1$ $\text{Área} = \frac{1^2\sqrt{3}}{2} = \frac{\sqrt{3}}{2}$
 diâmetro FE $\rightarrow 1$

28 - $\angle ALK = 170^\circ = \angle KLM - \angle BLM = 170^\circ - 90^\circ = \angle BLM$
 $= 90^\circ - \angle BLM = \angle BLM$
 $KL = LM$ $\angle KAL$ e $\angle BLM$ são complementares
 pela LAAO.

$x = AK$; $AL = 4 - x$; $LB = x$; $BM = AL = 4 - x$

$\text{Área} [AKMB] = \frac{AK \cdot BM \cdot AB}{2} = \frac{x \cdot (4 - x) \cdot 4}{2} = 8$

$\text{Área} [CDKM] = 4^2 = 8 = 8$ Área B