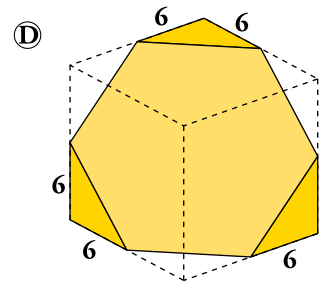
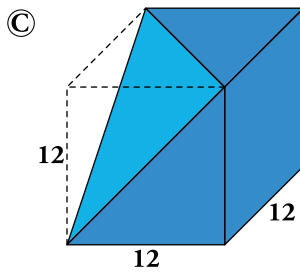
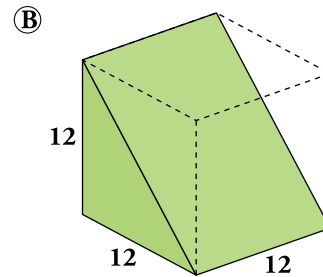
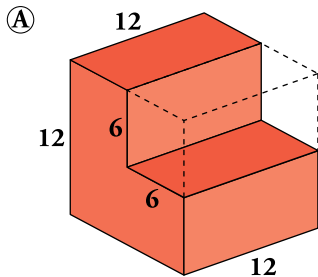


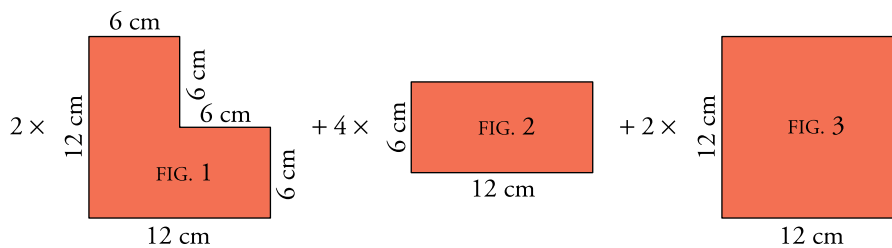
## 5 Superficie de los cuerpos geométricos

### Página 217

1. Calcula el área de estos poliedros obtenidos a partir de un cubo de 12 cm de arista:



Ⓐ Si hacemos el desarrollo de la figura, queda:



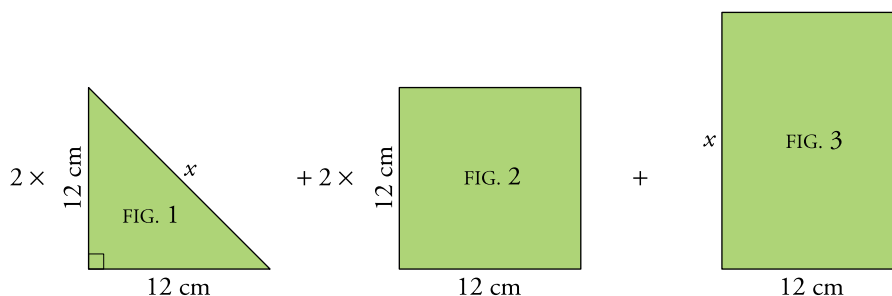
$$A_{\text{FIG. 1}} = 12 \cdot 6 + 6 \cdot 6 = 108 \text{ cm}^2$$

$$A_{\text{FIG. 3}} = 12^2 = 144 \text{ cm}^2$$

$$A_{\text{FIG. 2}} = 12 \cdot 6 = 72 \text{ cm}^2$$

$$A_{\text{TOTAL}} = 2 \cdot 108 + 4 \cdot 72 + 2 \cdot 144 = 792 \text{ cm}^2$$

Ⓑ Si hacemos el desarrollo de la figura, queda:



$$x = \sqrt{12^2 + 12^2} \approx 16,97 \text{ cm}$$

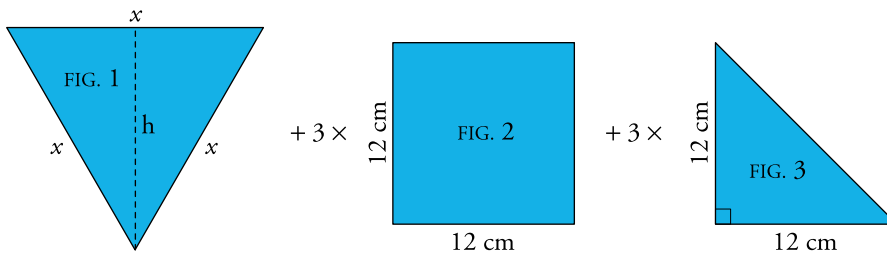
$$A_{\text{FIG. 2}} = 12^2 = 144 \text{ cm}^2$$

$$A_{\text{TOTAL}} = 2 \cdot 72 + 2 \cdot 144 + 203,64 = 635,64 \text{ cm}^2$$

$$A_{\text{FIG. 1}} = \frac{12^2}{2} = 72 \text{ cm}^2$$

$$A_{\text{FIG. 3}} = 12 \cdot 16,97 = 203,64 \text{ cm}^2$$

© Si hacemos el desarrollo de la figura, queda:



$$x \approx 16,97 \text{ cm (ver B)}; h = \sqrt{x^2 - \left(\frac{x}{2}\right)^2} = \frac{x\sqrt{3}}{2} \approx 14,70 \text{ cm}$$

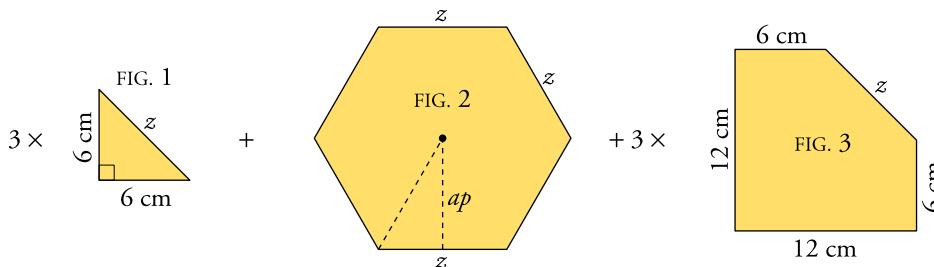
$$A_{\text{FIG. 1}} = \frac{16,97 \cdot 14,70}{2} \approx 124,73 \text{ cm}^2$$

$$A_{\text{FIG. 2}} = 12^2 = 144 \text{ cm}^2$$

$$A_{\text{FIG. 3}} = 72 \text{ cm}^2$$

$$A_{\text{TOTAL}} = 124,73 + 3 \cdot 144 + 3 \cdot 72 = 772,73 \text{ cm}^2$$

© Si hacemos el desarrollo de la figura, queda:



$$z = \sqrt{6^2 + 6^2} \approx 8,49 \text{ cm}$$

$$\text{Apotema del hexágono regular: } ap = \sqrt{z^2 - \left(\frac{z}{2}\right)^2} = \frac{z\sqrt{3}}{2} \approx 7,35 \text{ cm}$$

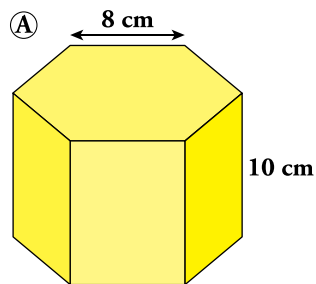
$$A_{\text{FIG. 1}} = 18 \text{ cm}^2$$

$$A_{\text{FIG. 2}} = \frac{6 \cdot 8,49 \cdot 7,35}{2} = 187,20 \text{ cm}^2$$

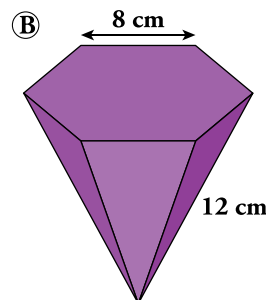
$$A_{\text{FIG. 3}} = 12 \cdot 12 - A_{\text{FIG. 1}} = 144 - 18 = 126 \text{ cm}^2$$

$$A_{\text{TOTAL}} = 3 \cdot 18 + 187,20 + 3 \cdot 126 = 619,2 \text{ cm}^2$$

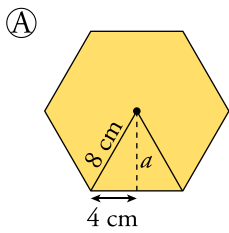
2. Obtén la medida de la superficie del prisma y de la pirámide. La base de ambos es un hexágono regular.



ARISTA BASE  $\rightarrow$  8 cm  
ALTURA PRISMA  $\rightarrow$  10 cm



ARISTA BASE  $\rightarrow$  8 cm  
ARISTA LATERAL  $\rightarrow$  12 cm



$$a = \sqrt{8^2 - 4^2} \approx 6,93 \text{ cm}$$

$$A_{\text{BASE}} = \frac{8 \cdot 6,93}{2} \cdot 6 = 166,32 \text{ cm}^2$$

$$A_{\text{LATERAL}} = 6 \cdot 8 \cdot 10 = 480 \text{ cm}^2$$

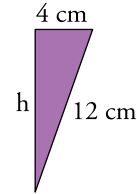
$$A_{\text{TOTAL}} = 2 \cdot 166,32 + 480 = 812,64 \text{ cm}^2$$

Ⓑ  $A_{\text{BASE}} = 166,32 \text{ cm}^2$

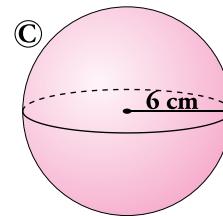
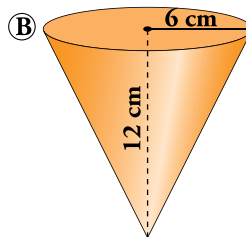
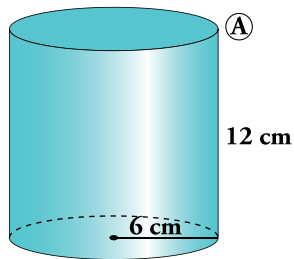
Apotema de la pirámide =  $h = \sqrt{12^2 - 4^2} \approx 11,31 \text{ cm}$

$$A_{\text{LATERAL}} = \frac{8 \cdot 11,31 \cdot 6}{2} = 271,44 \text{ cm}^2$$

$$A_{\text{TOTAL}} = 166,32 + 271,44 = 437,76 \text{ cm}^2$$



**3. Calcula el área de estos cuerpos:**



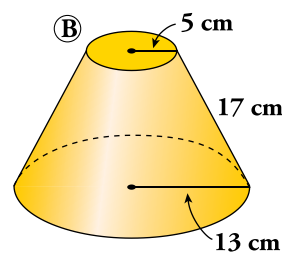
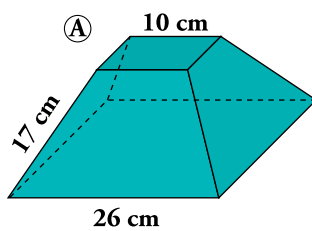
Ⓐ  $A_{\text{TOTAL}} = 2\pi \cdot 6 \cdot 12 + 2\pi \cdot 6^2 \approx 678,58 \text{ cm}^2$

Ⓑ  $g = \sqrt{12^2 + 6^2} \approx 13,42 \text{ cm}$

$$A_{\text{TOTAL}} = \pi \cdot 6 \cdot 13,42 + \pi \cdot 6^2 \approx 366,06 \text{ cm}^2$$

Ⓒ  $A_{\text{TOTAL}} = 4\pi \cdot 6^2 \approx 452,39 \text{ cm}^2$

**4. Calcula el área de los siguientes cuerpos:**



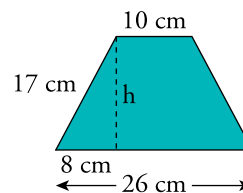
Ⓐ  $A_{\text{BASE GRANDE}} = 26^2 = 676 \text{ cm}^2$

$$A_{\text{BASE PEQUEÑA}} = 10^2 = 100 \text{ cm}^2$$

$$h = \sqrt{17^2 - 8^2} = 15 \text{ cm}$$

$$A_{\text{LATERAL}} = 4 \cdot \frac{26 + 10}{2} \cdot 15 = 1080 \text{ cm}^2$$

$$A_{\text{TOTAL}} = 676 + 100 + 1080 = 1856 \text{ cm}^2$$



Ⓑ  $A = \pi \cdot 13^2 + \pi \cdot 5^2 + \pi(13 + 5) \cdot 17 = 530,93 + 78,54 + 961,33 = 1570,8 \text{ cm}^2$