

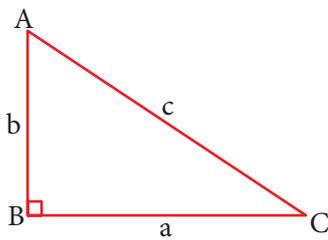


# TEOREMA DE PITÁGORAS

### • Marco teórico

#### TEOREMA DE PITÁGORAS

Dado un triángulo rectángulo ACB (recto en C):



Los lados adyacentes al ángulo recto se denominan catetos. El lado opuesto al ángulo recto se llama hipotenusa.

En el gráfico:

- ❖ Catetos:  $\overline{AC}$  y  $\overline{CB}$
- ❖ Hipotenusa:  $\overline{AB}$

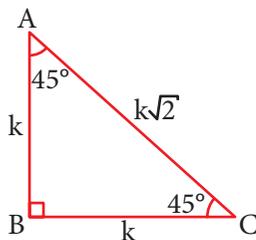
#### Teorema de Pitágoras:

$$a^2 + b^2 = c^2$$

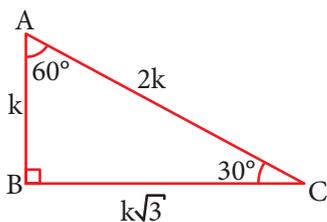
“La suma de los cuadrados de las longitudes de los catetos es igual al cuadrado de la longitud de la hipotenusa”.

#### Triángulos rectángulos notables exactos

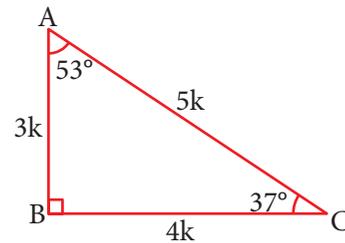
- ❖ De 45°



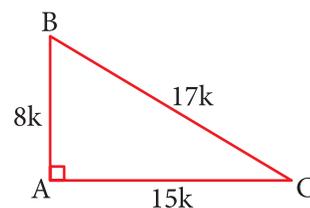
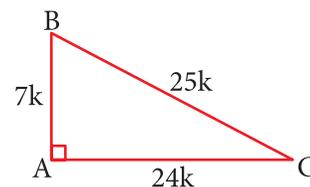
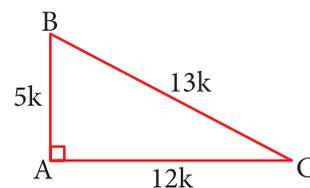
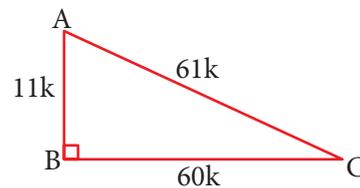
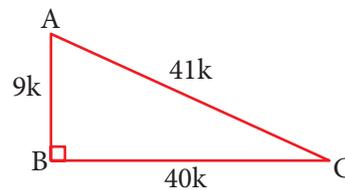
- ❖ De 30° y 60°



#### Aproximado

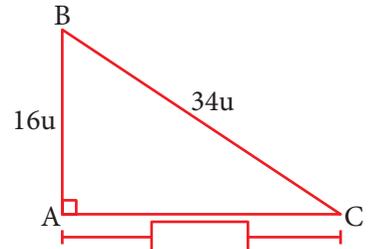
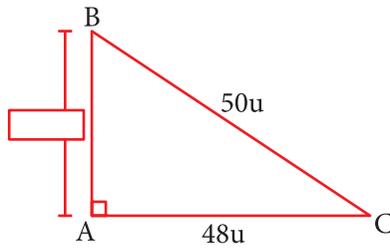
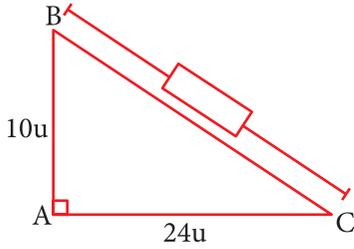


#### Triángulos pitagóricos



**Ejemplos:**

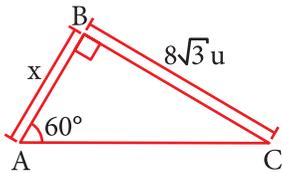
Completa los siguientes gráficos:



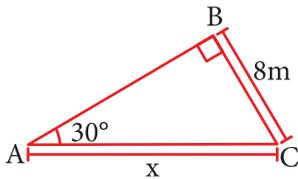
**Trabajando en Clase**

**Integral**

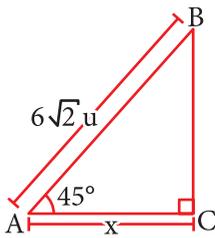
1. Según la figura mostrada, calcula "x".



2. En la figura mostrada, calcula "x".

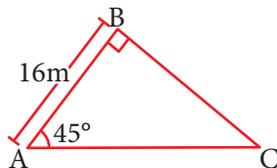


3. De la figura adjunta, calcula "x".



**Católica**

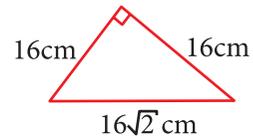
4. En la figura, calcula la longitud del perímetro del  $\triangle ABC$ .



**Resolución:**

- ❖ Dado el triángulo ABC notable de  $45^\circ$ .

- ❖ Luego tenemos:



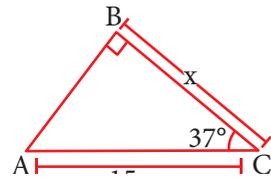
- ❖ Nos piden:

$$2p = 16 + 16 + 16\sqrt{2}$$

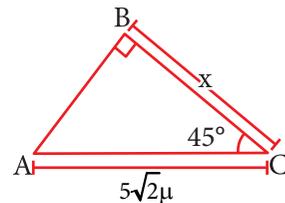
$$2p = 32 + 16\sqrt{2}$$

$$2p = 16(2 + \sqrt{2})$$

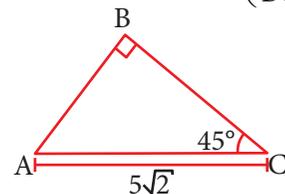
5. En la figura, calcula la longitud del perímetro del triángulo ABC.



6. Según la figura, calcula "x".

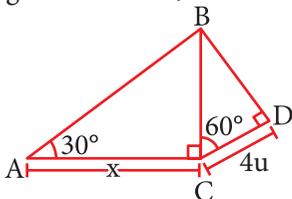


7. En la figura mostrada, calcula  $\left(\frac{AB}{BC}\right)^2$ .



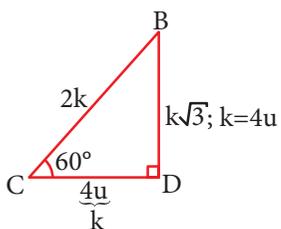
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8. Según la figura mostrada, calcula  $x$ .

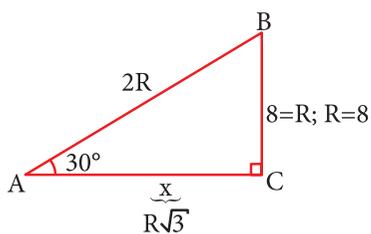


Resolución:

- En la figura tenemos

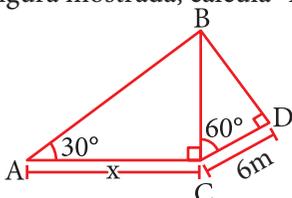


- Luego tenemos

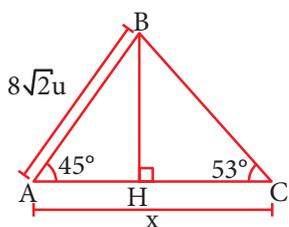


- Por tanto  $x = 8\sqrt{3}u$

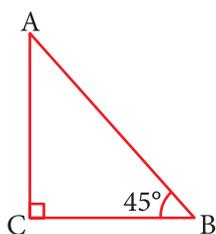
9. Según la figura mostrada, calcula " $x$ ".



10. Según el gráfico mostrado, calcula " $x$ ".

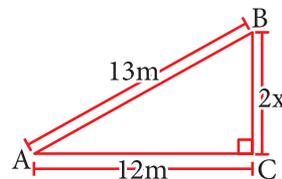


11. En la figura, calcula  $AC+BC$ , si:  $AB = 5\sqrt{2}m$



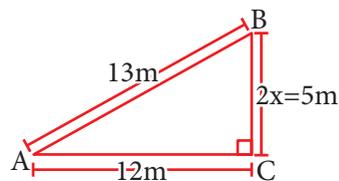
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12. En la figura mostrada, calcula " $x$ ".



Resolución:

- De la figura, tenemos



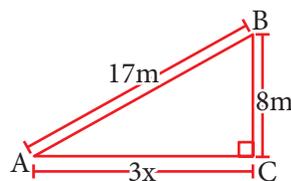
(triángulo pitagórico)

$$2x = 5m$$

$$x = \frac{5}{2}m$$

- Nos piden  $x = \frac{5}{2}m \rightarrow x = 2,5m$

13. En la figura mostrada, calcula  $x$ .



14. Según la figura mostrada, calcula " $x$ ".

