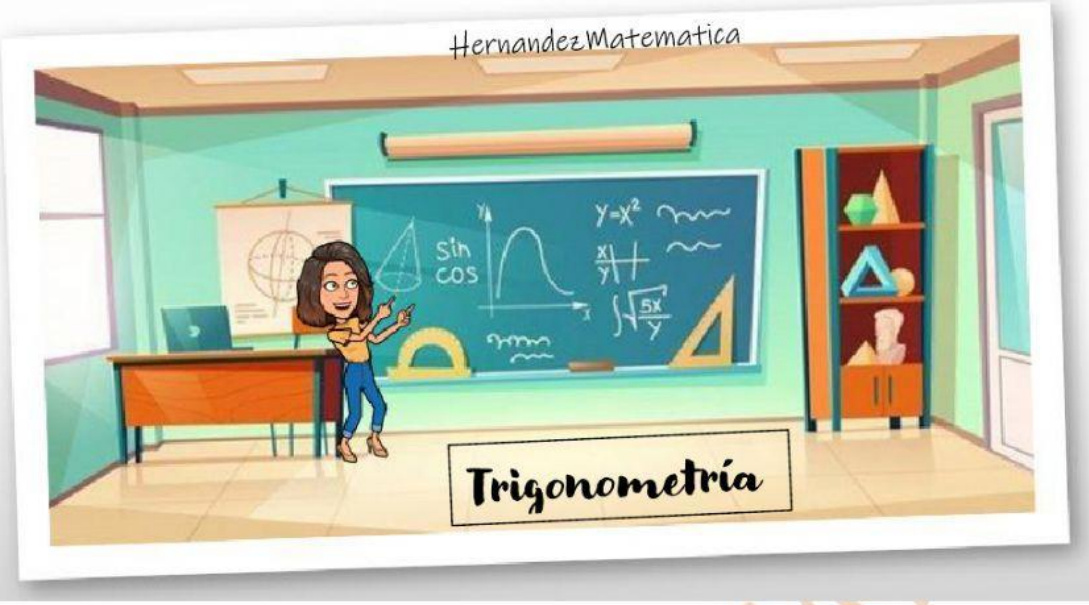
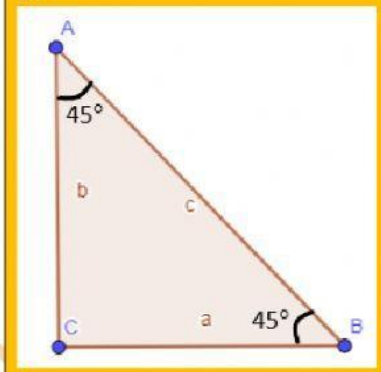
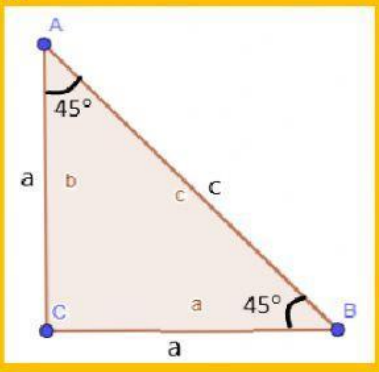
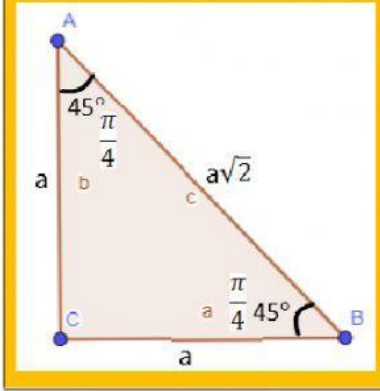
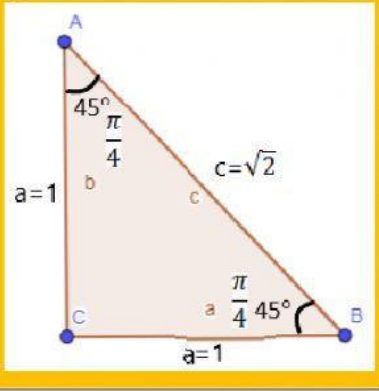


2.B.1.b Triángulos rectángulos especiales: Deducir ángulos de triángulos 45°-45°-90°

Teorema del triángulo 45°-45°-90°.

En un triángulo rectángulo **45°-45°-90°**, la longitud de la hipotenusa es igual $\sqrt{2}$

Demostración de aplicación del Teorema de Pitágoras en un triángulo 45°-45°-90°		
$a^2 + b^2 = c^2$	$a^2 + a^2 = c^2$	
1. 	**2.** 	**Triángulo Equilátero** $a^2 + a^2 = c^2$ $2a^2 = c^2$ $\sqrt{2a^2} = \sqrt{c^2}$ $a\sqrt{2} = c$
3. 	**4.** 	**Círculo Unitario** a=1 $1\sqrt{2} = c$

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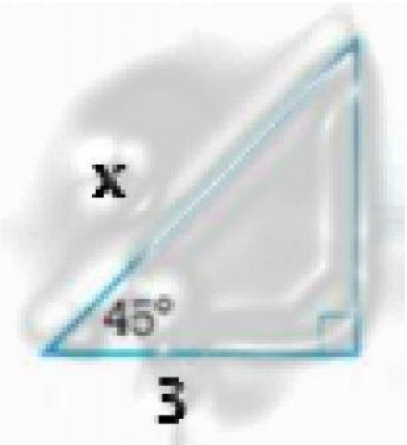
La figura 3 muestra, la medida estándar de los lados que se forman al construir un triángulo rectángulo especial **45°-45°-90°**. Como se puede observar, los lados mediarán iguales (a) y la hipotenusa tiene la medida de los lados multiplicada por la $\sqrt{2}$ (a$\sqrt{2}$).

Existen tres casos al resolver las medidas de un triángulo 30°-60°-90° y 60°-30°-90°.

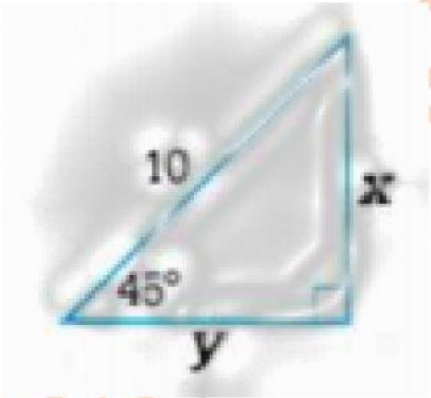
Caso #1-Dado: cateto (a), encuentre: hipotenusa (a$\sqrt{2}$)



Si el cateto mide a=3

x=hipotenusa=a= a$\sqrt{2}$=3 $\sqrt{2}$

Caso #2-Dado: hipotenusa (2a), encuentre: cateto menor (a) y cateto mayor (a$\sqrt{2}$)



Si la hipotenusa es a$\sqrt{2}$=10

x=cateto =a=5

y= a$\sqrt{2}$= 5$\sqrt{2}$

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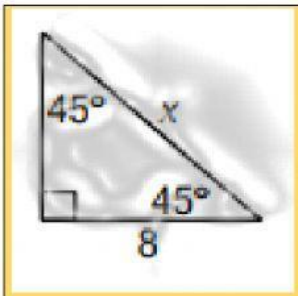
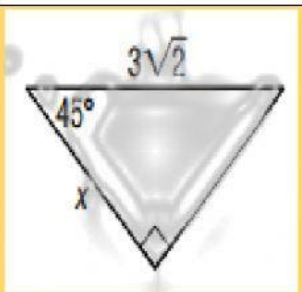
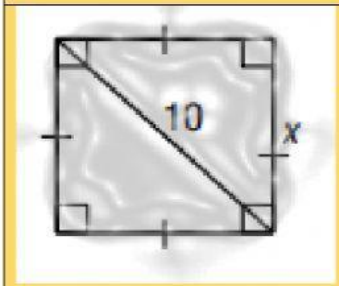
Encuentre el valor de x. Redondee a un lugar decimal.



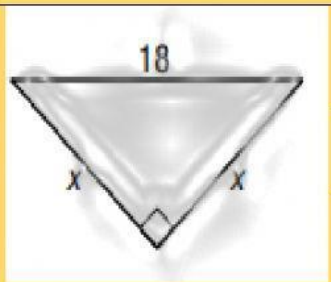
X=



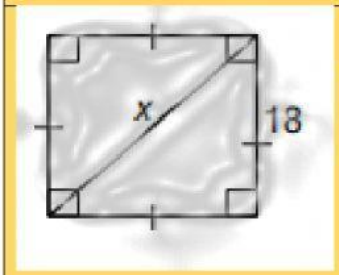
X=



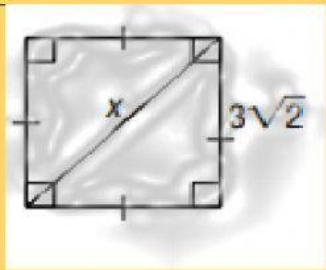
X=



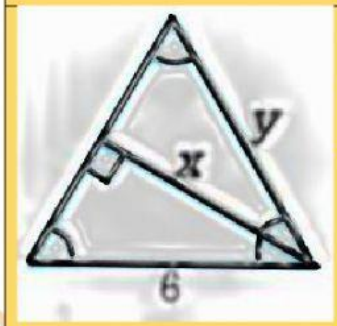
X=



X=



X=



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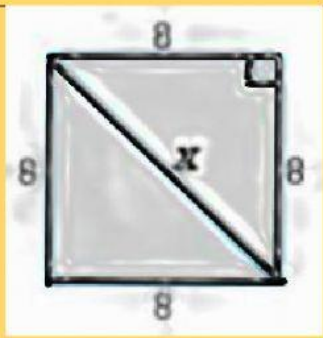
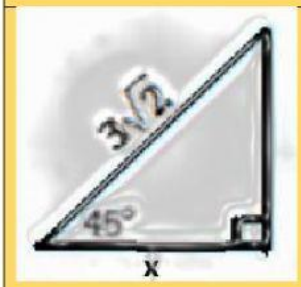
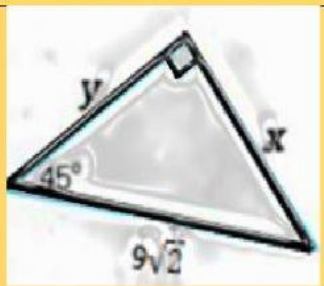


X=



X=



X=

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