

Pythagorean

$$x^2 + x^2 = (BC)^2$$

Theorem

$$\sqrt{2}x = BC$$

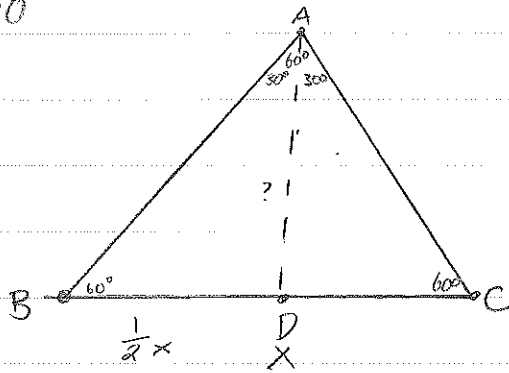
$$\sqrt{2} \cdot \sqrt{x^2} = BC$$

$$\sqrt{2} \cdot x = x\sqrt{2} = BC$$

45-45-90

$$x : x : x\sqrt{2}$$

30-60-90



$$x^2 = \left(\frac{1}{2}x\right)^2 + (AD)^2$$

$$x^2 = \frac{1}{4}x^2 + (AD)^2$$

$$\frac{3}{4}x^2 = (AD)^2$$

$$\sqrt{\frac{3}{4}x^2} = AD$$

$$\sqrt{\frac{3}{4}} \cdot \sqrt{x^2} = AD$$

$$\frac{\sqrt{3}}{2} \cdot x = AD$$

30-60-90

$$\frac{1}{2}x : \frac{\sqrt{3}}{2}x : x$$

multiply by 2

or  $x : x\sqrt{3} : 2x$

↑  
shortest leg

↑  
hypotenuse