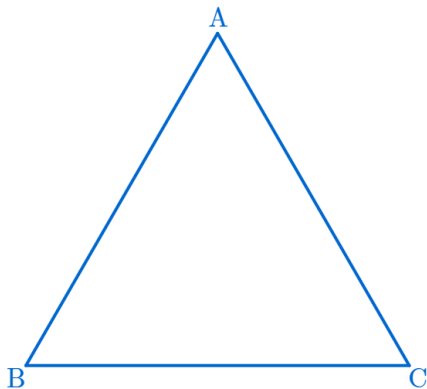


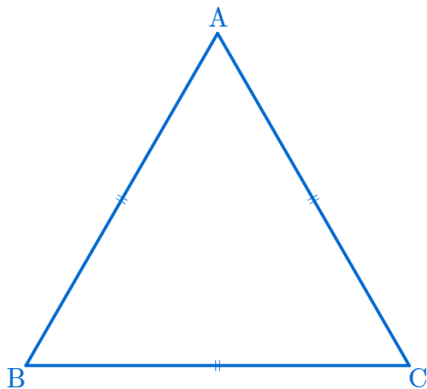
# 30-60-90도 삼각형 (30-60-90 Degree Triangles)

## 30-60-90 Degree Triangles

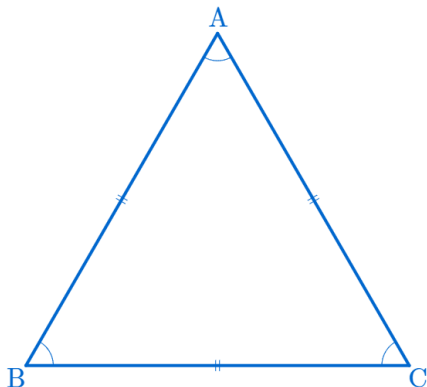
## 30-60-90 Degree Triangles



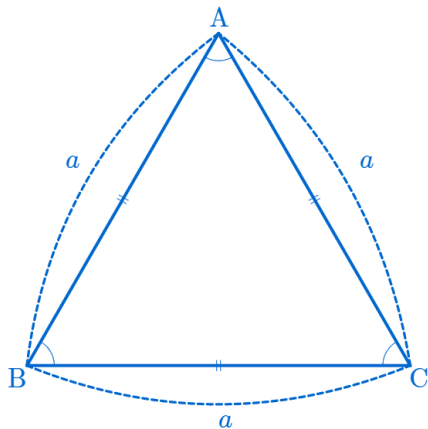
## 30-60-90 Degree Triangles



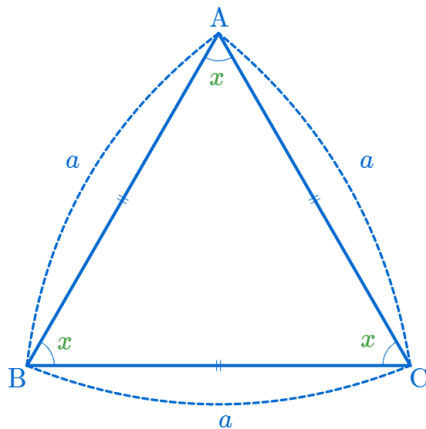
## 30-60-90 Degree Triangles



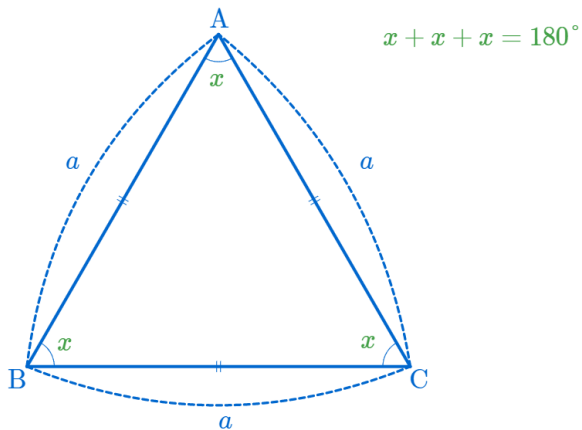
## 30-60-90 Degree Triangles



## 30-60-90 Degree Triangles

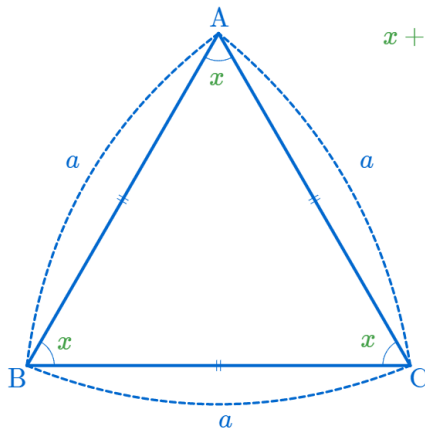


## 30-60-90 Degree Triangles



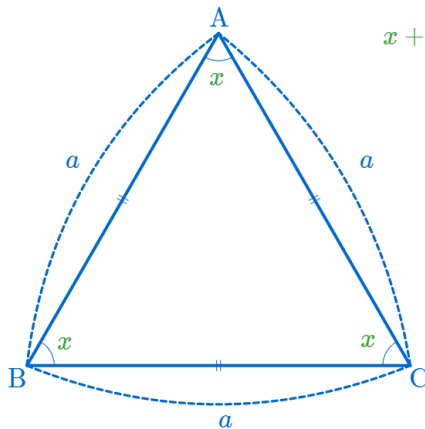


## 30-60-90 Degree Triangles



$$\begin{aligned}x + x + x &= 180^\circ \\3x &= 180^\circ\end{aligned}$$

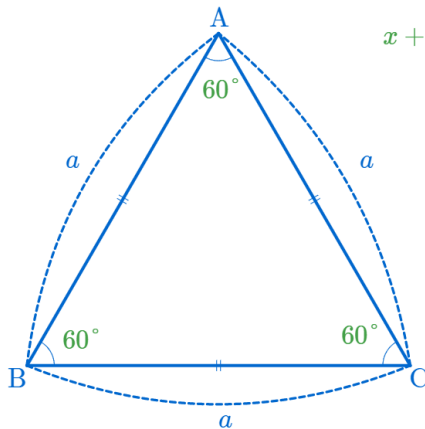
## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

$$3x = 180^\circ \quad \therefore x = 60^\circ$$

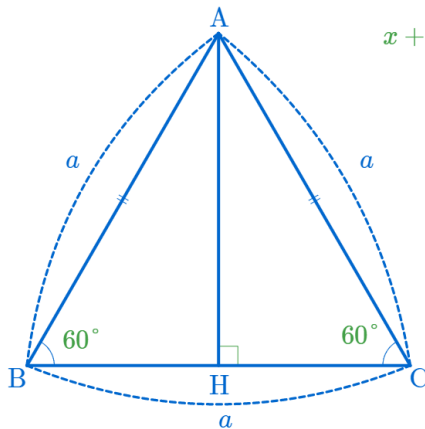
## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

$$3x = 180^\circ \quad \therefore x = 60^\circ$$

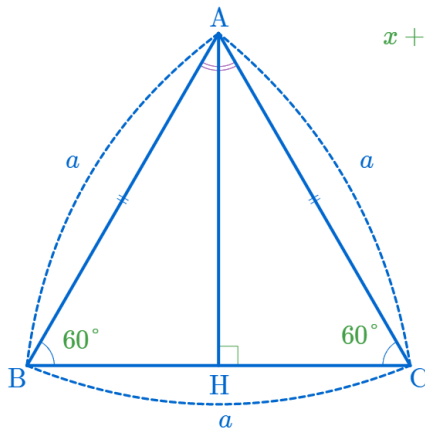
## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

$$3x = 180^\circ \therefore x = 60^\circ$$

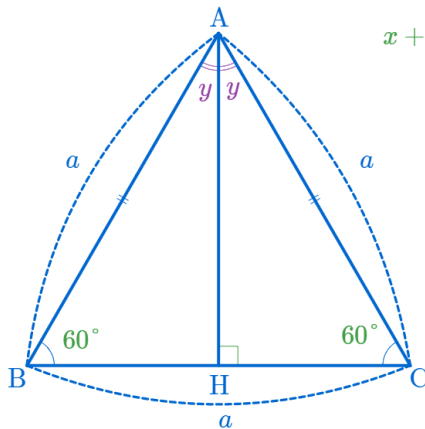
## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

$$3x = 180^\circ \quad \therefore x = 60^\circ$$

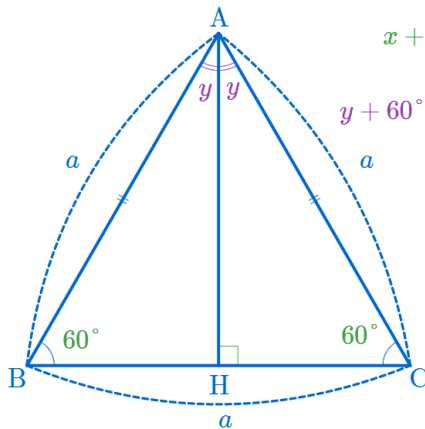
## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

$$3x = 180^\circ \quad \therefore x = 60^\circ$$

## 30-60-90 Degree Triangles

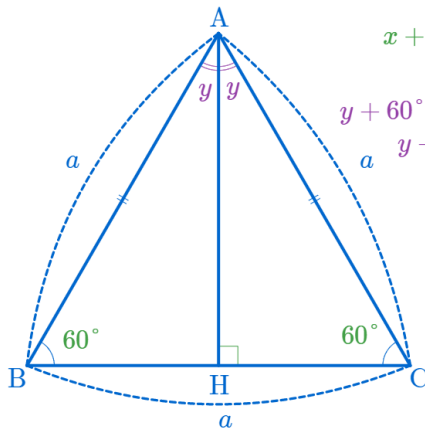


$$x + x + x = 180^\circ$$

$$3x = 180^\circ \quad \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

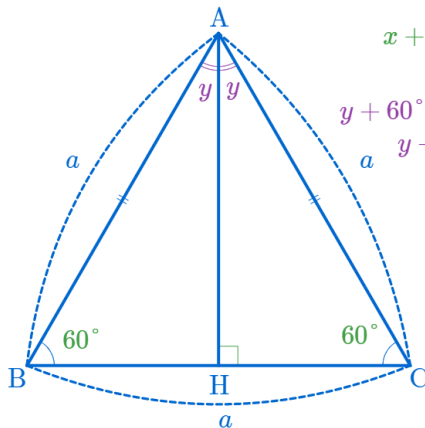
$$3x = 180^\circ \quad \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

$$y + 150^\circ = 180^\circ$$



## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

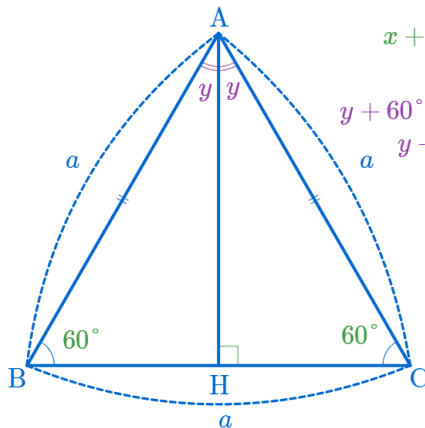
$$3x = 180^\circ \quad \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

$$y + 150^\circ = 180^\circ$$

$$y = 180^\circ - 150^\circ$$

## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

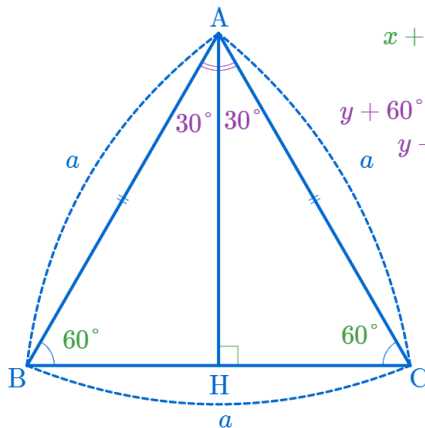
$$3x = 180^\circ \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

$$y + 150^\circ = 180^\circ$$

$$y = 180^\circ - 150^\circ \therefore y = 30^\circ$$

## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

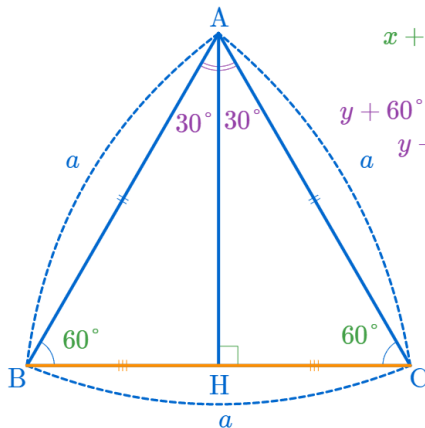
$$3x = 180^\circ \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

$$y + 150^\circ = 180^\circ$$

$$y = 180^\circ - 150^\circ \therefore y = 30^\circ$$

## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

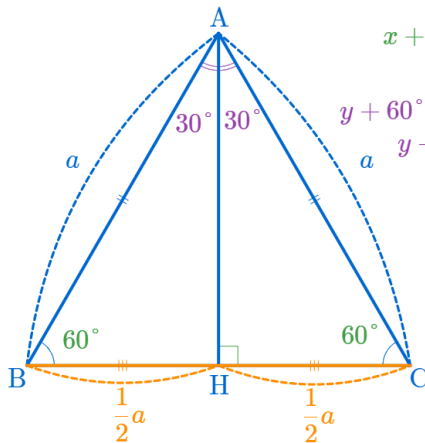
$$3x = 180^\circ \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

$$y + 150^\circ = 180^\circ$$

$$y = 180^\circ - 150^\circ \therefore y = 30^\circ$$

## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

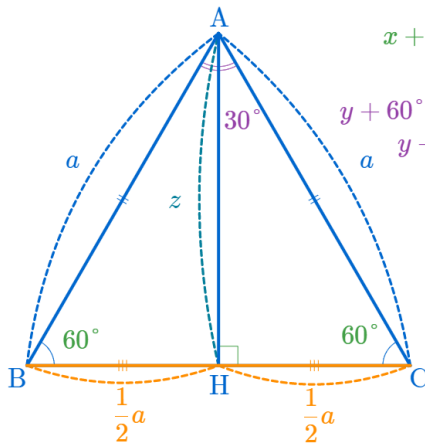
$$3x = 180^\circ \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

$$y + 150^\circ = 180^\circ$$

$$y = 180^\circ - 150^\circ \therefore y = 30^\circ$$

## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

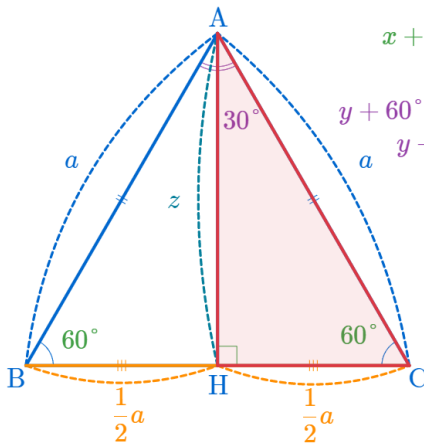
$$3x = 180^\circ \quad \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

$$y + 150^\circ = 180^\circ$$

$$y = 180^\circ - 150^\circ \quad \therefore y = 30^\circ$$

## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

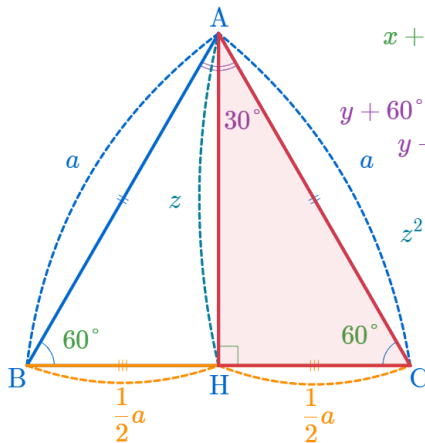
$$3x = 180^\circ \quad \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

$$y + 150^\circ = 180^\circ$$

$$y = 180^\circ - 150^\circ \therefore y = 30^\circ$$

## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

$$3x = 180^\circ \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

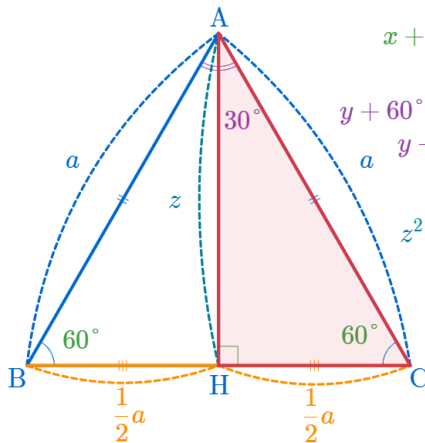
$$y + 150^\circ = 180^\circ$$

$$y = 180^\circ - 150^\circ \therefore y = 30^\circ$$

$$z^2 + \left(\frac{1}{2}a\right)^2 = a^2$$



## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

$$3x = 180^\circ \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

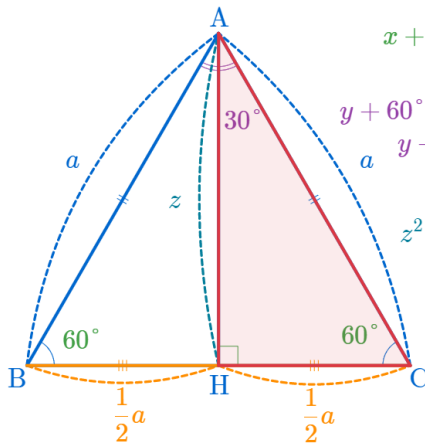
$$y + 150^\circ = 180^\circ$$

$$y = 180^\circ - 150^\circ \therefore y = 30^\circ$$

$$z^2 + \left(\frac{1}{2}a\right)^2 = a^2$$

$$z^2 = a^2 - \left(\frac{1}{2}a\right)^2$$

## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

$$3x = 180^\circ \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

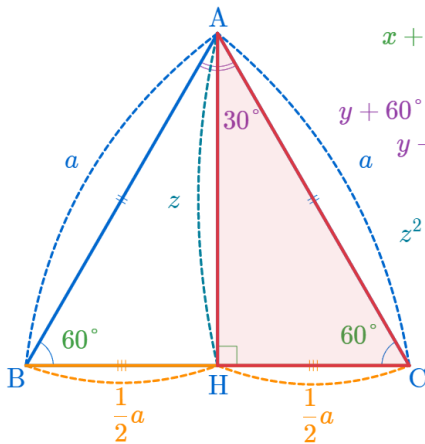
$$y + 150^\circ = 180^\circ$$

$$y = 180^\circ - 150^\circ \therefore y = 30^\circ$$

$$z^2 + \left(\frac{1}{2}a\right)^2 = a^2$$

$$z^2 = a^2 - \left(\frac{1}{2}a\right)^2 = \frac{3}{4}a^2$$

## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

$$3x = 180^\circ \quad \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

$$y + 150^\circ = 180^\circ$$

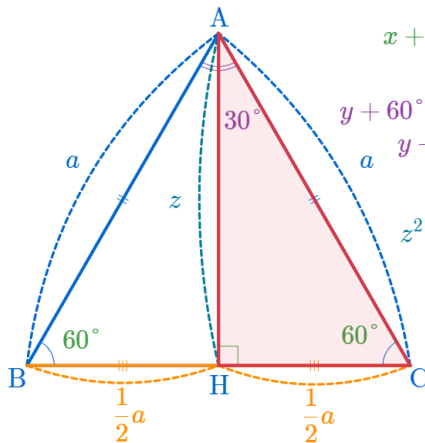
$$y = 180^\circ - 150^\circ \therefore y = 30^\circ$$

$$z^2 + \left(\frac{1}{2}a\right)^2 = a^2$$

$$z^2 = a^2 - \left(\frac{1}{2}a\right)^2 = \frac{3}{4}a^2$$

$$z = \pm \frac{\sqrt{3}}{2}a$$

# 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

$$3x = 180^\circ \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

$$y + 150^\circ = 180^\circ$$

$$y = 180^\circ - 150^\circ \therefore y = 30^\circ$$

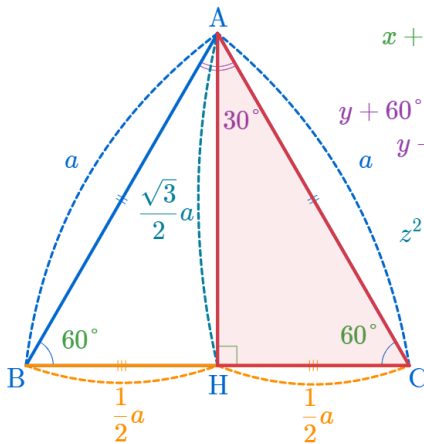
$$z^2 + \left(\frac{1}{2}a\right)^2 = a^2$$

$$z^2 = a^2 - \left(\frac{1}{2}a\right)^2 = \frac{3}{4}a^2$$

$$z = \pm \frac{\sqrt{3}}{2}a$$

$$\therefore z = \frac{\sqrt{3}}{2}a (\because z > 0)$$

## 30-60-90 Degree Triangles



$$x + x + x = 180^\circ$$

$$3x = 180^\circ \quad \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

$$y + 150^\circ = 180^\circ$$

$$y = 180^\circ - 150^\circ \therefore y = 30^\circ$$

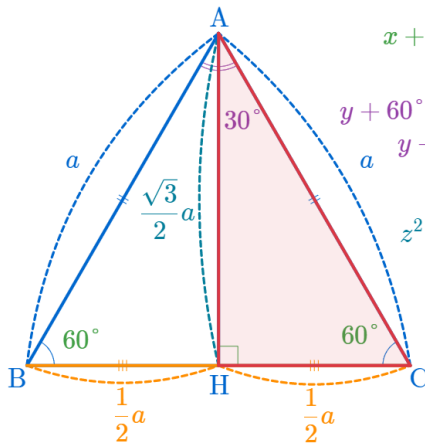
$$z^2 + \left(\frac{1}{2}a\right)^2 = a^2$$

$$z^2 = a^2 - \left(\frac{1}{2}a\right)^2 = \frac{3}{4}a^2$$

$$z = \pm \frac{\sqrt{3}}{2}a$$

$$\therefore z = \frac{\sqrt{3}}{2}a (\because z > 0)$$

# 30-60-90 Degree Triangles



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

$$x + x + x = 180^\circ$$

$$3x = 180^\circ \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

$$y + 150^\circ = 180^\circ$$

$$y = 180^\circ - 150^\circ \therefore y = 30^\circ$$

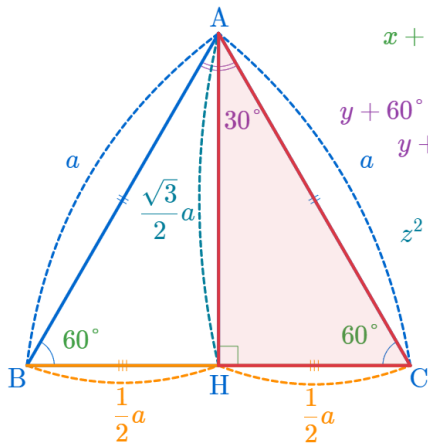
$$z^2 + \left(\frac{1}{2}a\right)^2 = a^2$$

$$z^2 = a^2 - \left(\frac{1}{2}a\right)^2 = \frac{3}{4}a^2$$

$$z = \pm \frac{\sqrt{3}}{2}a$$

$$\therefore z = \frac{\sqrt{3}}{2}a (\because z > 0)$$

# 30-60-90 Degree Triangles



$$a : \frac{\sqrt{3}}{2}a : \frac{1}{2}a = 2 : \sqrt{3} : 1$$

$$x + x + x = 180^\circ$$

$$3x = 180^\circ \therefore x = 60^\circ$$

$$y + 60^\circ + 90^\circ = 180^\circ$$

$$y + 150^\circ = 180^\circ$$

$$y = 180^\circ - 150^\circ \therefore y = 30^\circ$$

$$z^2 + \left(\frac{1}{2}a\right)^2 = a^2$$

$$z^2 = a^2 - \left(\frac{1}{2}a\right)^2 = \frac{3}{4}a^2$$

$$z = \pm \frac{\sqrt{3}}{2}a$$

$$\therefore z = \frac{\sqrt{3}}{2}a (\because z > 0)$$

YouTube: <https://youtu.be/cSEfKvvH7to>

AlgeoMath: <http://me2.do/GQw9LIn7>

Click or paste URL into the URL search bar, and you can see a picture moving.