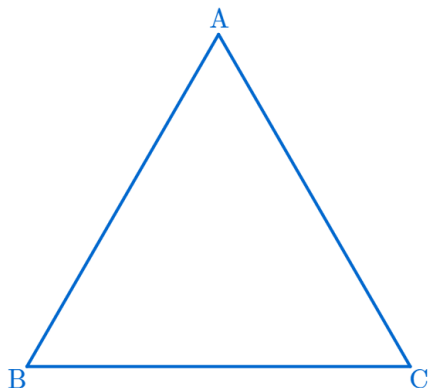


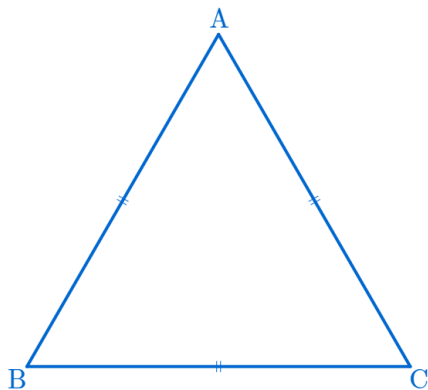
# 30-60-90도 삼각형

(30-60-90 Degree Triangles)

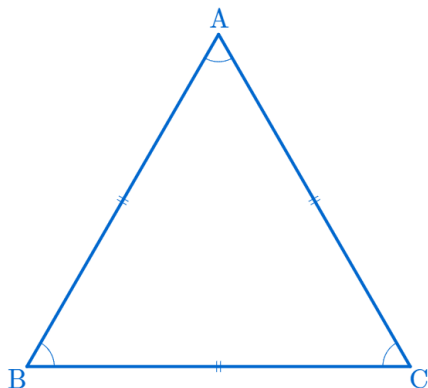


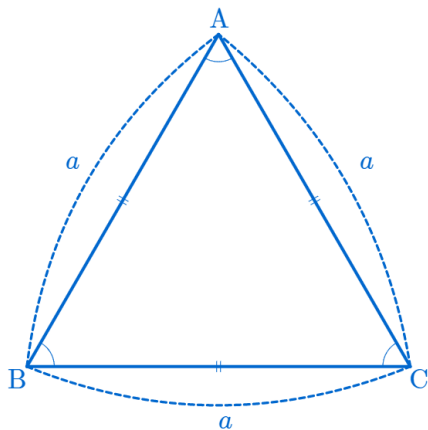


## 30-60-90 Degree Triangles

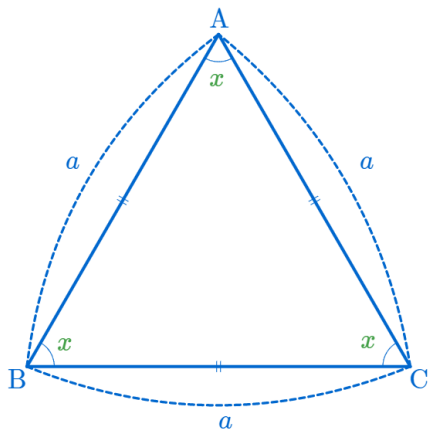


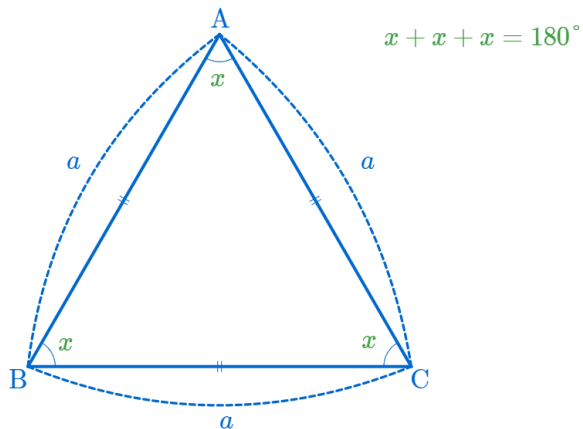
## 30-60-90 Degree Triangles



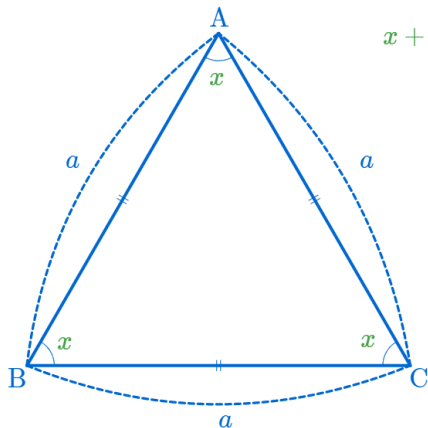


## 30-60-90 Degree Triangles



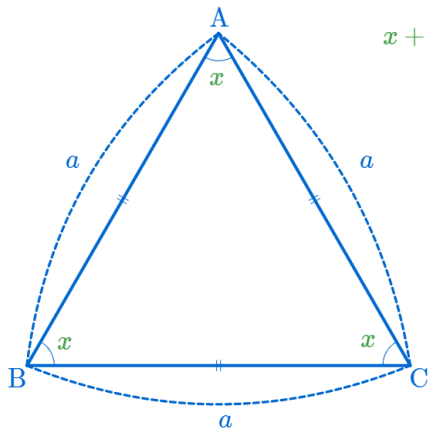






$$x + x + x = 180^\circ$$

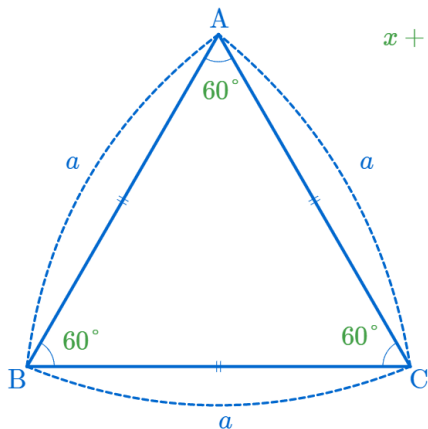
$$3x = 180^\circ$$



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

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

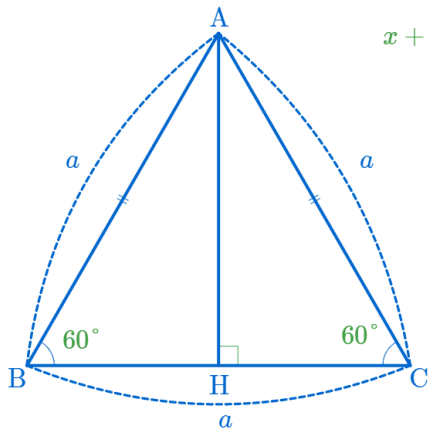
## 30-60-90 Degree Triangles



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

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

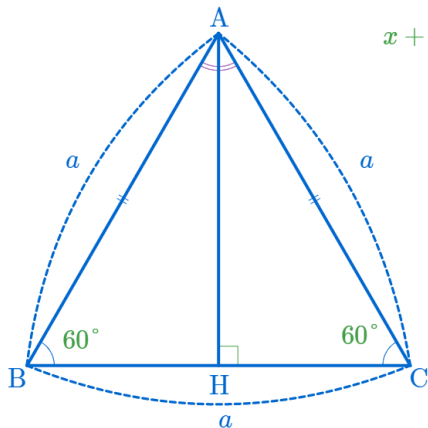
## 30-60-90 Degree Triangles



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

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

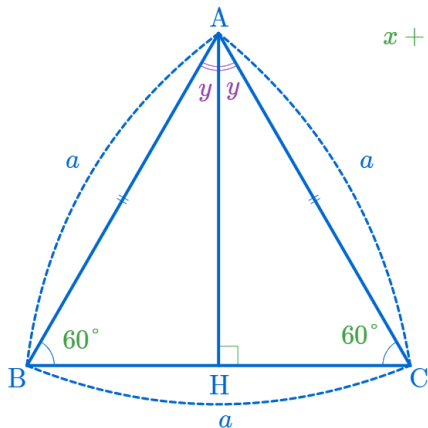
## 30-60-90 Degree Triangles



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

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

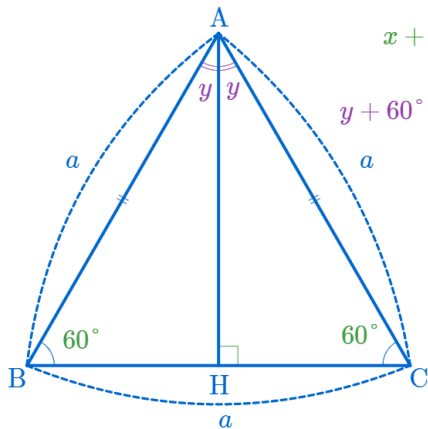
## 30-60-90 Degree Triangles



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

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

## 30-60-90 Degree Triangles

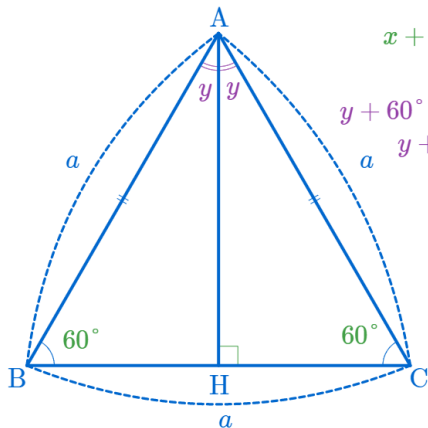


$$x + x + x = 180^\circ$$

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

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

## 30-60-90 Degree Triangles



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

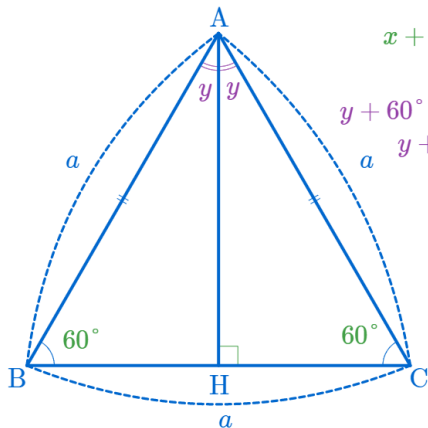
$$3x = 180^\circ \quad \therefore x = 60^\circ$$

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

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



## 30-60-90 Degree Triangles



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

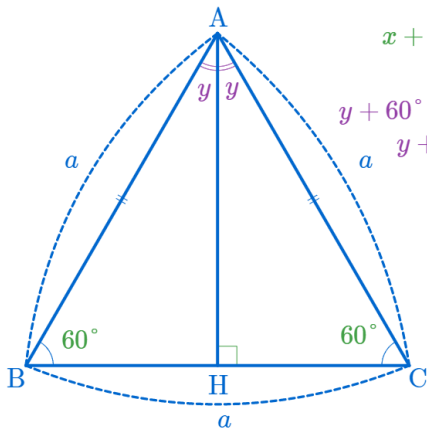
$$3x = 180^\circ \quad \therefore x = 60^\circ$$

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

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

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

## 30-60-90 Degree Triangles



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

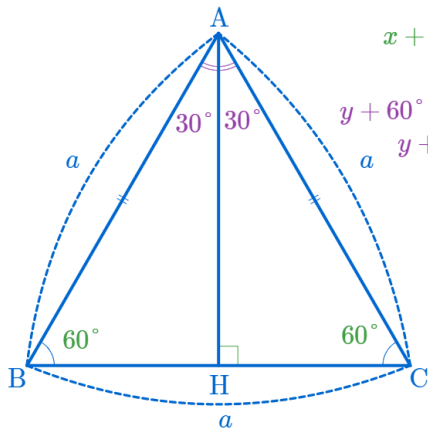
$$3x = 180^\circ \quad \therefore x = 60^\circ$$

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

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

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

## 30-60-90 Degree Triangles



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

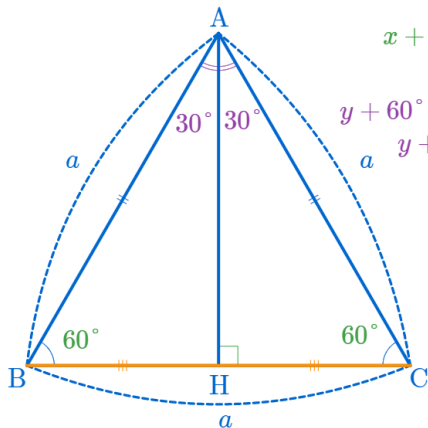
$$3x = 180^\circ \quad \therefore x = 60^\circ$$

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

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

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

## 30-60-90 Degree Triangles



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

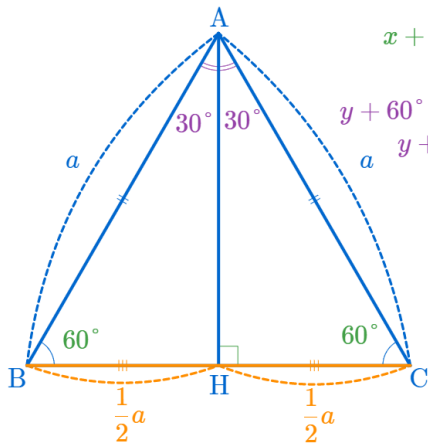
$$3x = 180^\circ \quad \therefore x = 60^\circ$$

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

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

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

## 30-60-90 Degree Triangles



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

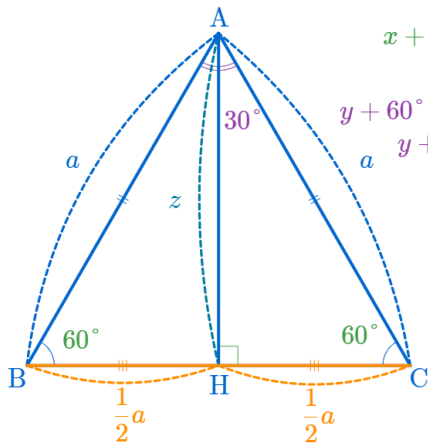
$$3x = 180^\circ \quad \therefore x = 60^\circ$$

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

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

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

## 30-60-90 Degree Triangles



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

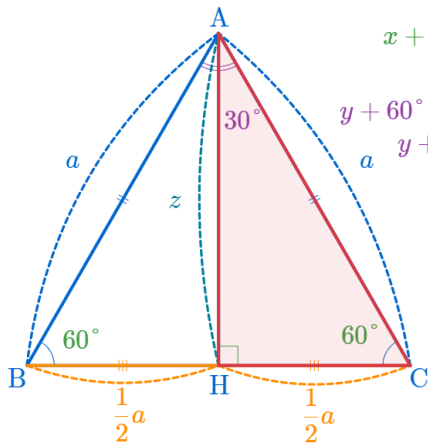
$$3x = 180^\circ \quad \therefore x = 60^\circ$$

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

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

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

## 30-60-90 Degree Triangles



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

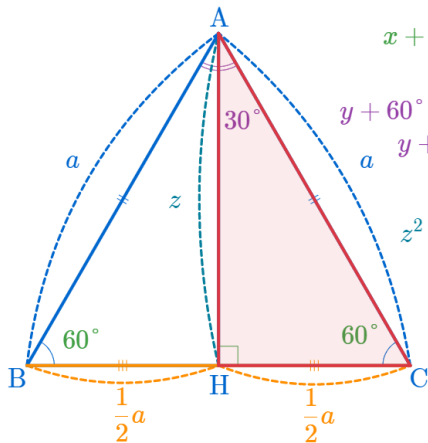
$$3x = 180^\circ \quad \therefore x = 60^\circ$$

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

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

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

## 30-60-90 Degree Triangles



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

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

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

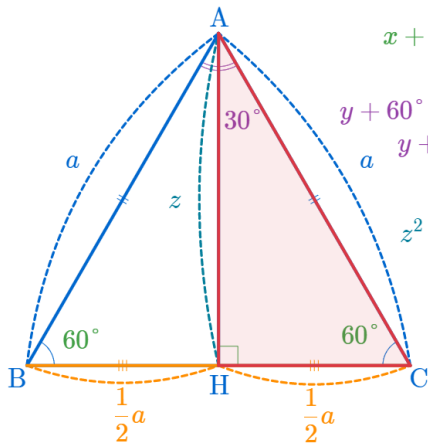
$$y + 150^\circ = 180^\circ$$

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

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



## 30-60-90 Degree Triangles



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

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

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

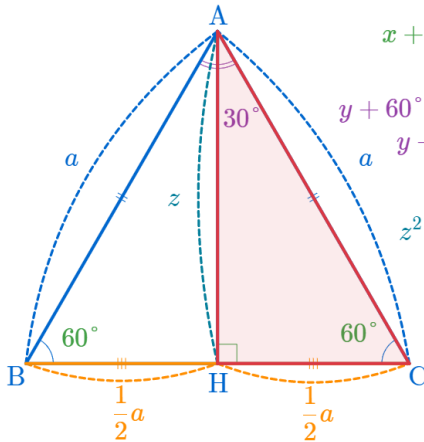
$$y + 150^\circ = 180^\circ$$

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

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

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

# 30-60-90 Degree Triangles



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

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

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

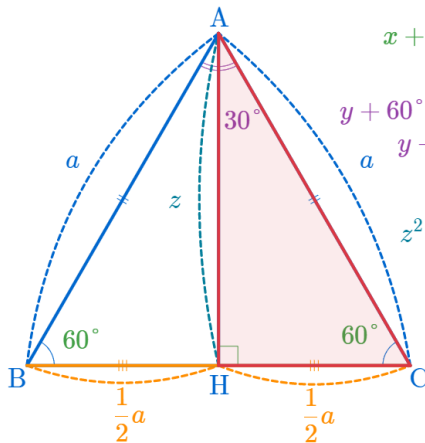
$$y + 150^\circ = 180^\circ$$

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

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

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

## 30-60-90 Degree Triangles



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

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

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

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

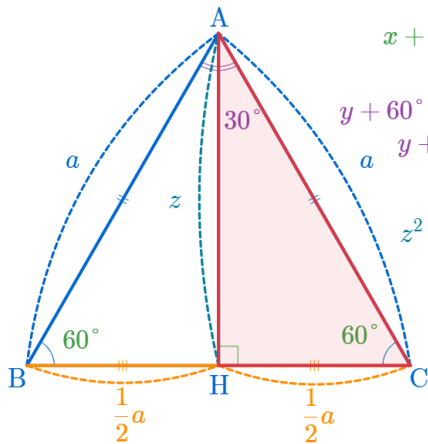
$$y = 180^\circ - 150^\circ \quad \therefore y = 30^\circ$$

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

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

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

## 30-60-90 Degree Triangles



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

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

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

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

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

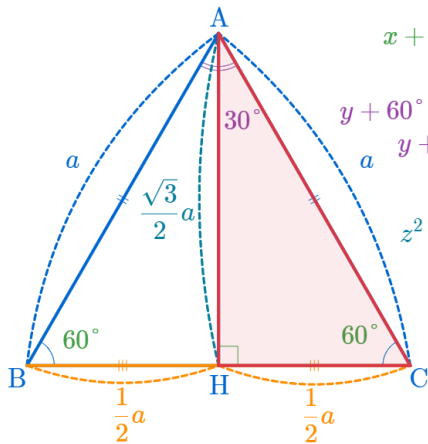
$$z^2 + \left(\frac{1}{2}a\right)^2 = a^2$$

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

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

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

## 30-60-90 Degree Triangles



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

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

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

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

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

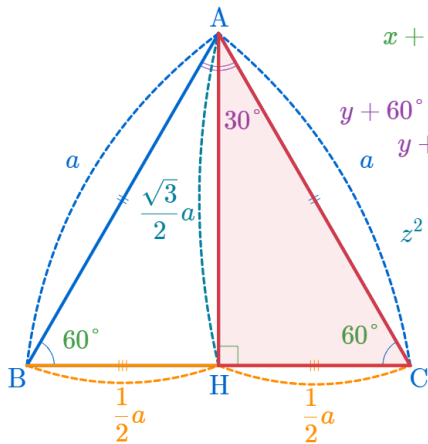
$$z^2 + \left(\frac{1}{2}a\right)^2 = a^2$$

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

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

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

# 30-60-90 Degree Triangles



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

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

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

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

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

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

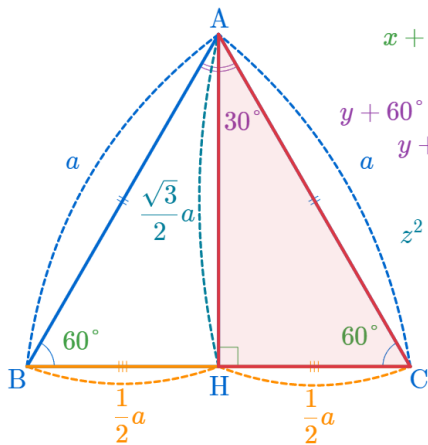
$$z^2 + \left(\frac{1}{2}a\right)^2 = a^2$$

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

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

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

# 30-60-90 Degree Triangles



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

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

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

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

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

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

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

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

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

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

github:

<https://min7014.github.io/math20200115001.html>

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