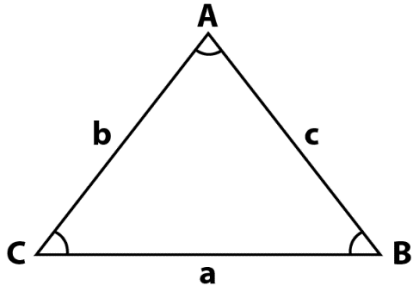


## Relation between 3 sides of Triangle

(त्रिभुज की 3 भुजाओं के बीच संबंध)

### I. Acute Angle Triangle / न्यून कोण त्रिभुज

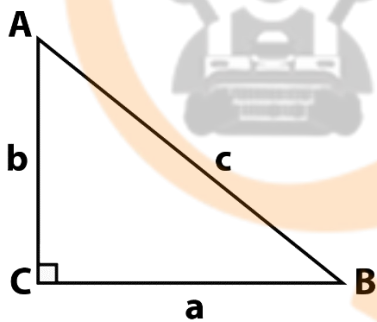


$\angle C = \text{largest}$  /  $\angle C =$  सबसे बड़ा कोण

side  $c = \text{largest}$  / भुजा  $c$  सबसे बड़ा

$$c^2 < a^2 + b^2$$

### II. Right Angle Triangle / समकोण त्रिभुज

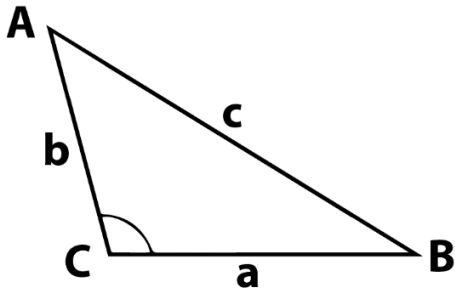


$\angle C = \text{largest}$  /  $\angle C =$  सबसे बड़ा कोण

side  $c = \text{largest}$  / भुजा  $C =$  सबसे बड़ा

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

### III. Obtuse Angle Triangle / अधिक कोण त्रिभुज



$\angle C$  largest /  $\angle C =$  सबसे बड़ा कोण

side c = largest / भुजा C = सबसे बड़ा

$$c^2 > a^2 + b^2$$

❖ Sides of triangle: 11.7, 16.9, 23.4. which type of  $\Delta$  it is?

त्रिभुज की भुजाएँ: 11.7, 16.9, 23.4. यह किस प्रकार का  $\Delta$  है?

Take ratio of sides 11.7 : 16.9 : 23.4

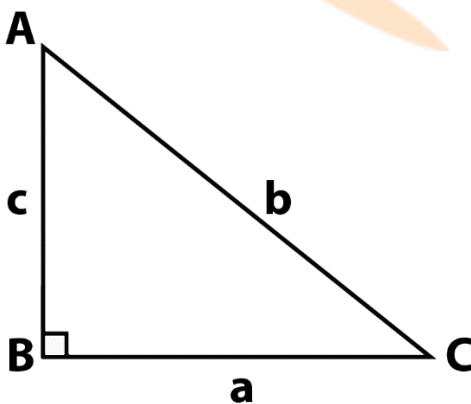
$$9 : 13 : 18$$

$$18^2 > 9^2 + 13^2$$

$\Delta$  is obtuse angle triangle.

**TRIPLETS (त्रिक)**

❖



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

(3,4,5), (5,12,13), (7,24,25),

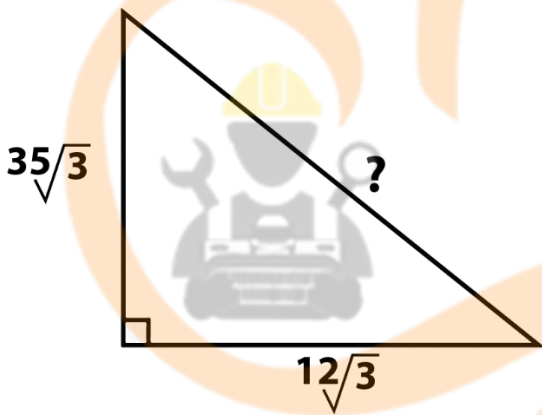
(8,15,17), (9,40,41), (11,60,61),  
 (12,35,37), (16,63,65), (13,84,85),  
 (20,21,29), (28,45,53), (33,56,65),  
 (39,80,89), (36,77,85), (65, 72, 97),  
 (20, 99, 101)

multiplication and division on these triplets will also result in triplets.  
 इन त्रिक पर गुणा और भाग का परिणाम भी त्रिक होगा।

$$(5,12, 13) \xrightarrow{\times 2} (10, 24, 26)$$

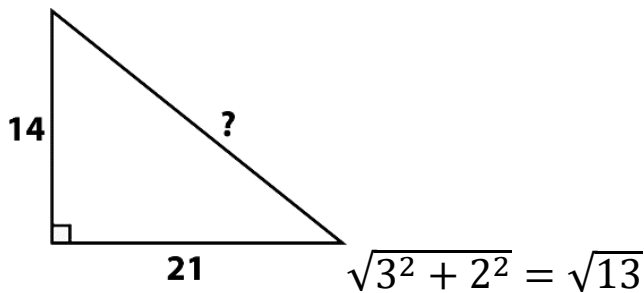
$$(3,4,5) \rightarrow (6,8,10), (9,12,15), (12,16,20), (15,20,25)$$

**Ex: 1** →



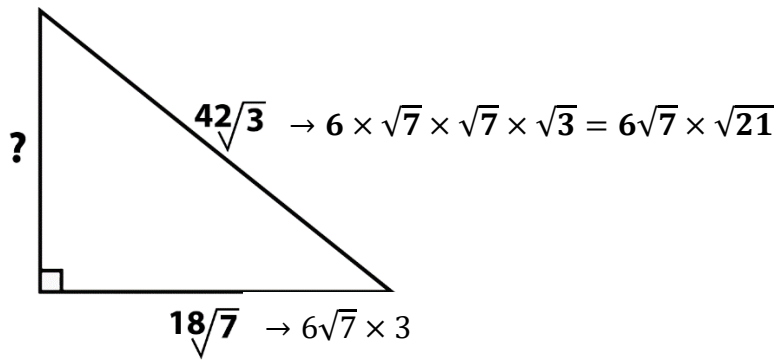
$$\begin{array}{ccc} 7 & 24 & 25 \\ \downarrow +2 & \downarrow +2 & \downarrow +2 \\ 3.5 & 12 & 12.5 \Rightarrow 3.5\sqrt{3}, 12\sqrt{3}, 12.5\sqrt{3} \end{array}$$

**Ex: 2** →



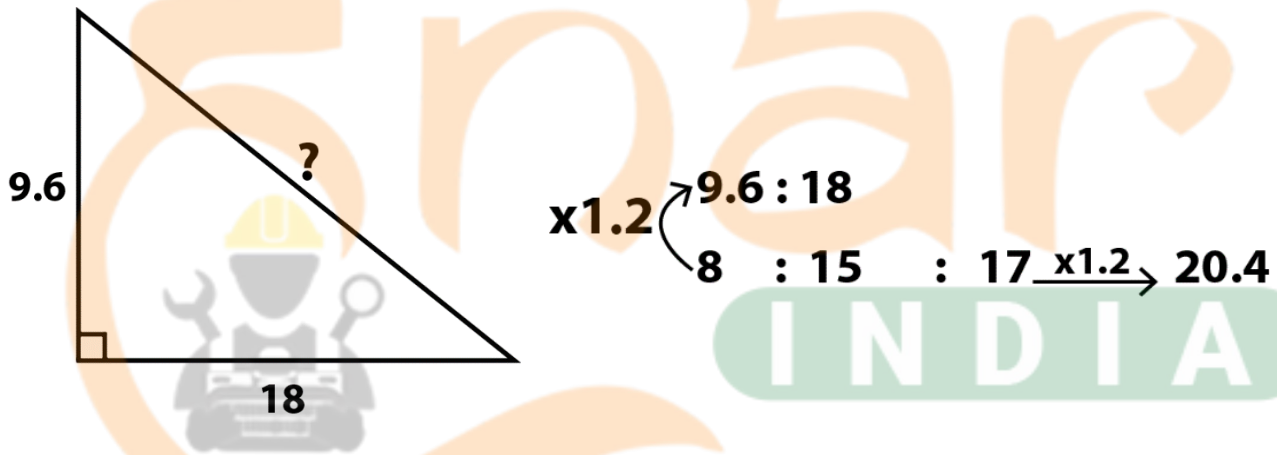
$$(7) \times 2 \quad (7) \times 3 \quad (7) \times \sqrt{13} = 7\sqrt{13}$$

**Ex: 3** →



3rd side =  $6\sqrt{7} \times \sqrt{21 - 9} = 6\sqrt{7} \times \sqrt{12} = 12\sqrt{21}$

**Ex: 4** →

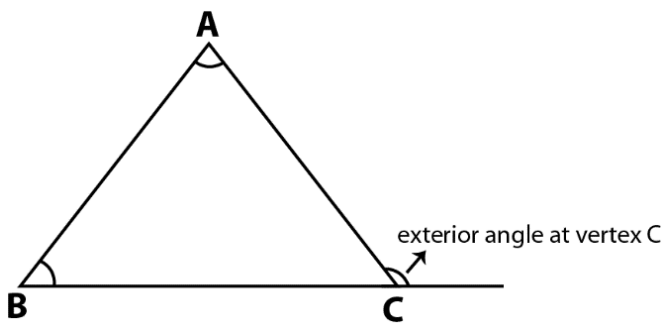


❖ Exterior angle is equal to sum of opposite interior angles.

बाहरी कोण विपरीत आंतरिक कोणों के योग के बराबर है।

$$A+B+C = 180^\circ$$

$$A+B = 180^\circ - C$$



sum of all exterior angles =  $360^\circ$

सभी बाहरी कोणों का योग =  $360^\circ$

