



TARGET EXAM 2026-27

SELECTION BATCH CLASS - 01

6 PM Daily

ZERO TO HERO

1.5hr

TRIGONOMETRY

त्रिकोणमिति

BASIC से SELECTION तक

TRIGONOMETRY



SSC+ RAILWAY EXAMS
2-3 QUESTIONS ✓



CDS+DEFENCE EXAMS
10%+ WEIGHTAGE



INCLUDE 2018-2025
(SSC+RAILWAY)



$$\sin^2 \theta + \cos^2 \theta = 1$$



SSC EXAMS /

- CGL ✓
- CHSL ✓
- CPO ✓
- SELECTION PHASE ✓
- DELHI POLICE HEAD CONSTABLE ✓



RAILWAY EXAMS /

- RAILWAY (NTPC GRADUATE LEVEL + 12TH LEVEL) ✓
- RRB ALP ✓
- PARAMEDICAL ✓
- SECTIONAL CONTROLLER ✓
- RRB GROUP D ✓

CDS

TRIGONOMETRY + HEIGHT & DISTANCE



NO. OF SHEETS -

06

(5+1)



NO. OF QUESTIONS -

400+

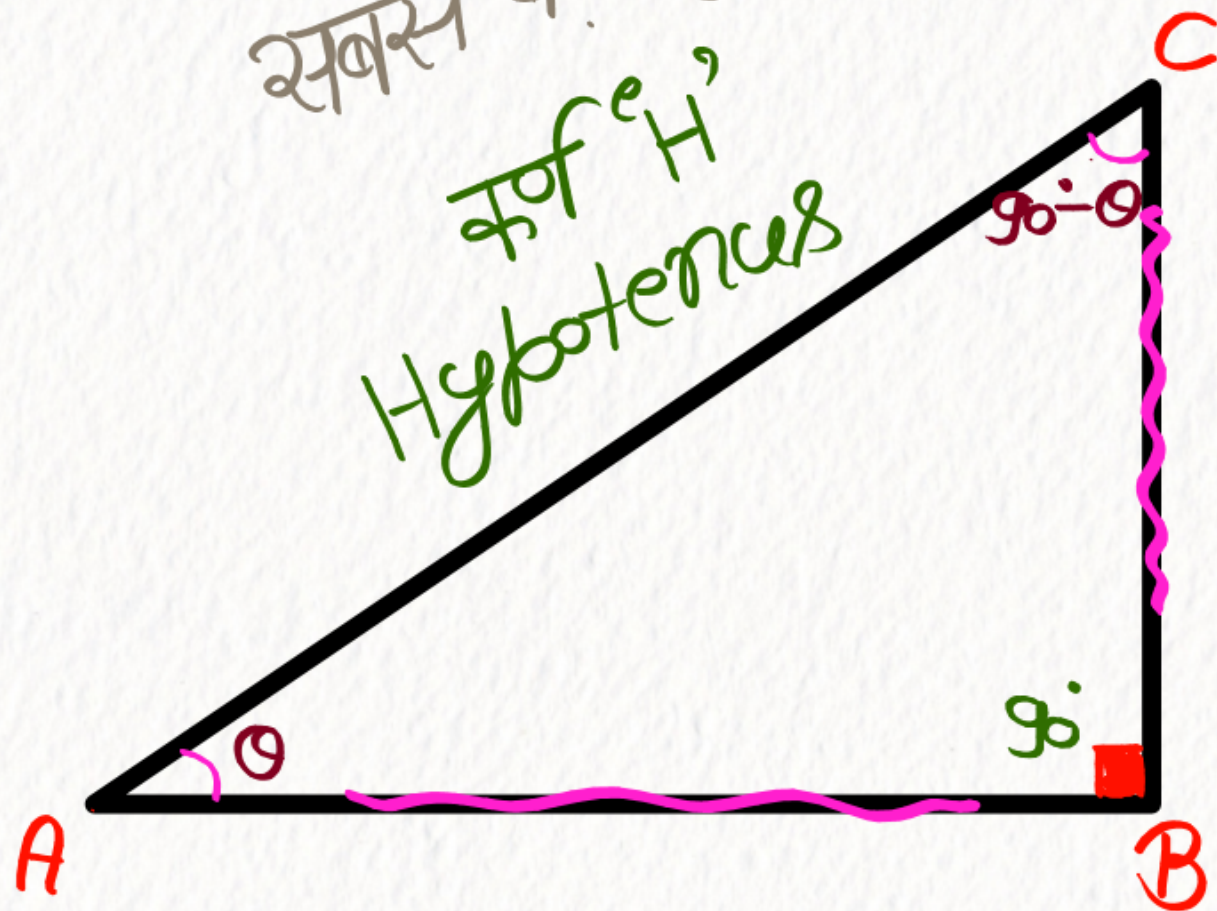


NO. OF CLASSES -

≈ 25

+

सबसे बड़ी भुजा
 कर्ण 'H'
 Hypotenuse

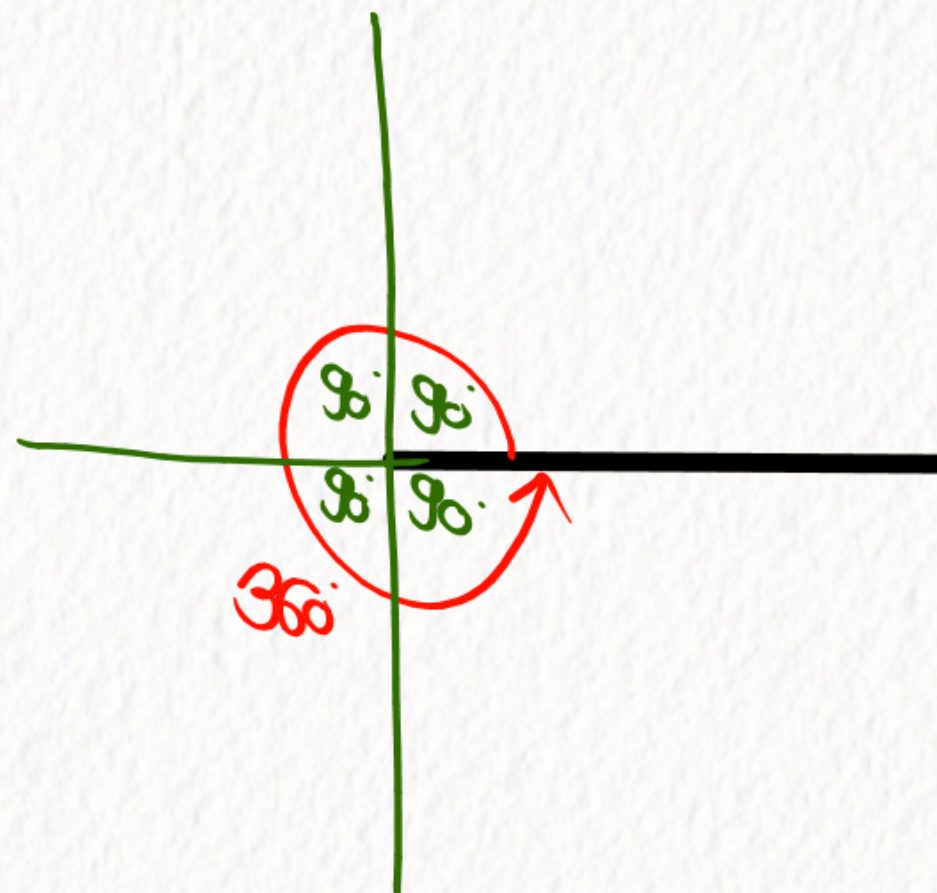


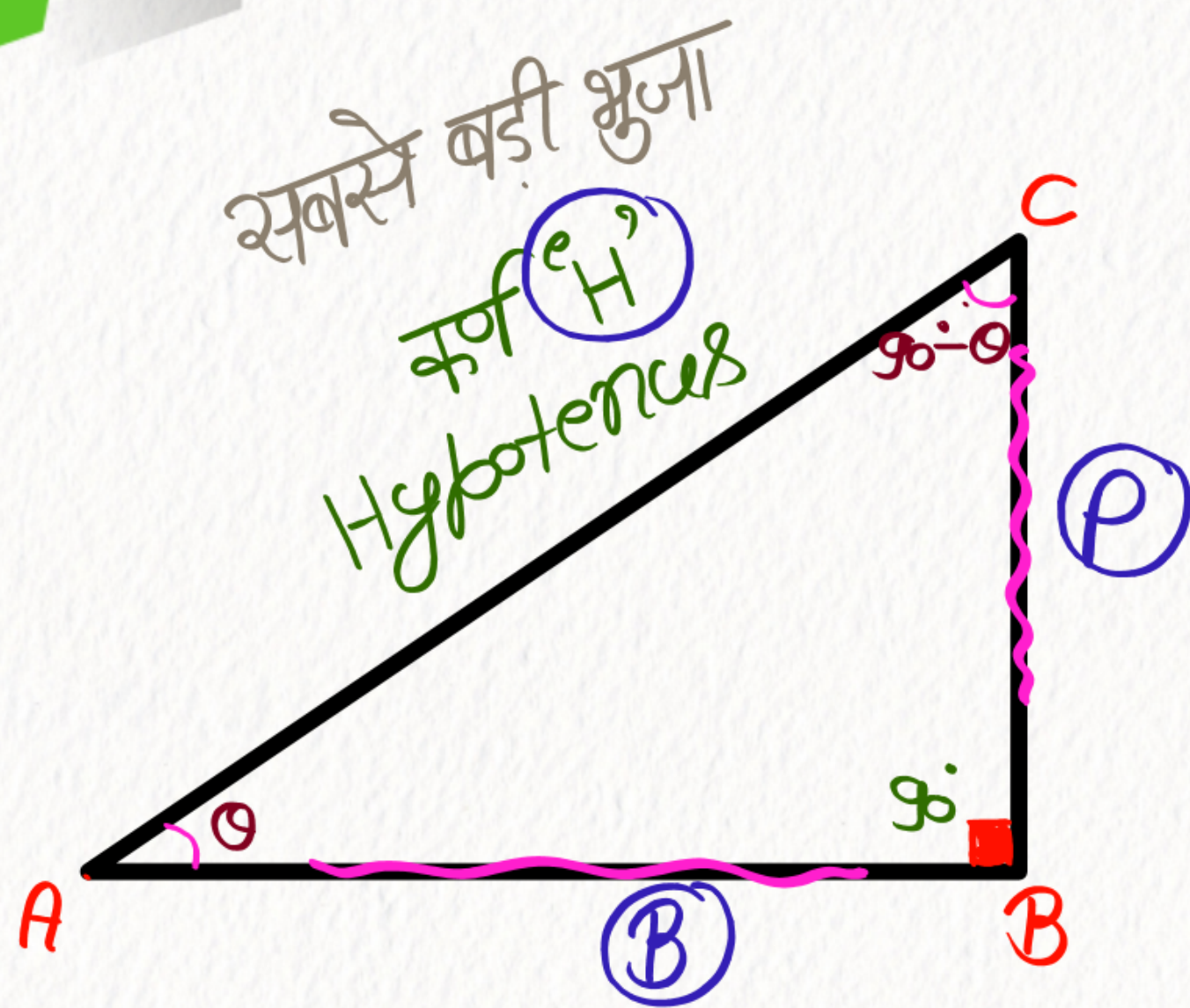
$A, C \rightarrow$ acute angle

$$A + C = 90^\circ$$

$$AB \perp BC$$

leg (perpendicular sides)
 लम्बकी भुजाएँ





$A, C \rightarrow$ acute angle

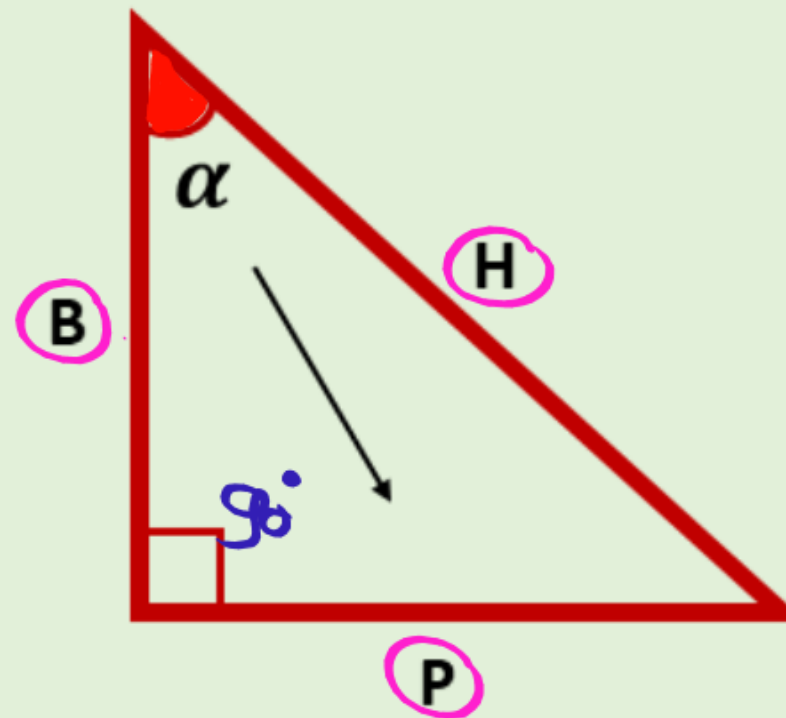
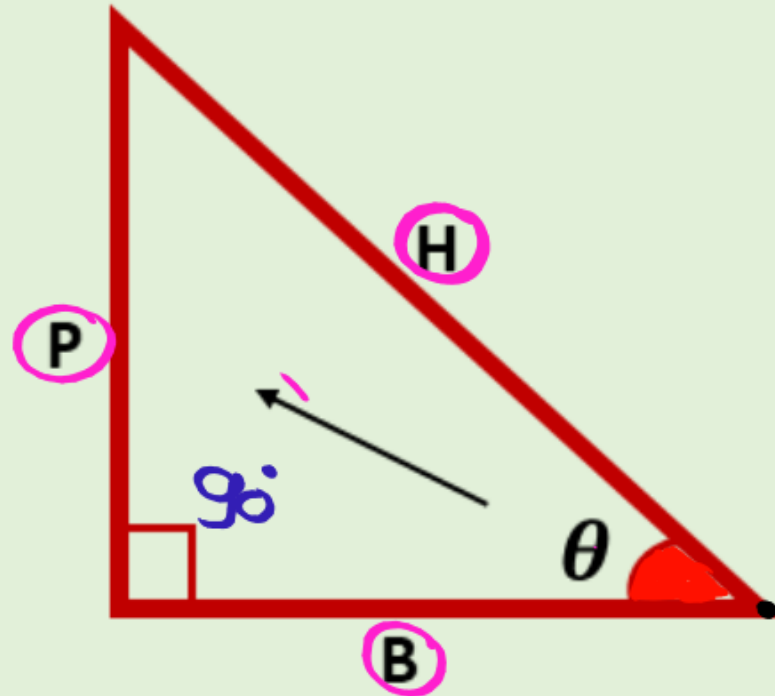
$$A + C = 90^\circ$$

$$H^2 = P^2 + B^2 \Rightarrow H = \sqrt{P^2 + B^2}$$

$$P^2 = H^2 - B^2 \Rightarrow P = \sqrt{H^2 - B^2}$$

$$B^2 = H^2 - P^2 \Rightarrow B = \sqrt{H^2 - P^2}$$

Trigonometry (त्रिकोणमिति)



H → Hypotenuse (कर्ण)
P → Perpendicular (लम्ब)
B → Base (आधार)

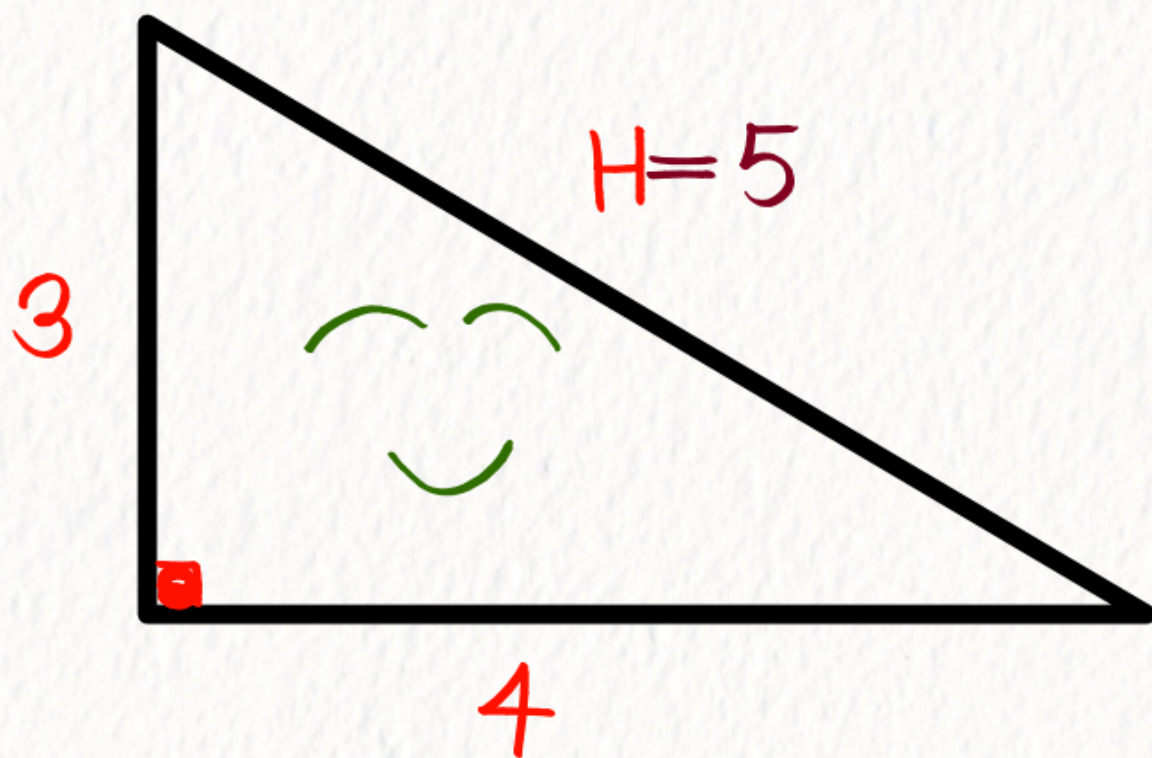
$$H^2 = P^2 + B^2$$

Pythagoras Theorem

A Pythagoras triplet is a set of +ve integers a, b and c that fits the rule
(एक पाइथागोरेस त्रिक धनात्मक संख्याएँ a, b, c का एक ऐसा समूह है, जो इस नियम को संतुष्ट करता है)

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

$$3^2 + 4^2 = 5^2 \quad \therefore 3, 4, 5 \text{ are Triplets}$$



Triplets $\leftarrow (3, 4, 5)$

$$H^2 = 3^2 + 4^2$$

$$H^2 = 9 + 16$$

$$H^2 = 25$$

$$H = 5$$

$$3^2 + 4^2 = 5^2$$

Some Pythagorean Triplets

(3, 4, 5) ✓

(5, 12, 13) ✓

(7, 24, 25) ✓

(8, 15, 17) ✓

(9, 40, 41) ✓

(11, 60, 61) ✓

(12, 35, 37) ✓

(13, 84, 85) ✓

(16, 63, 65) ✓

(20, 21, 29) ✓

(20, 99, 101) ✓

(28, 45, 53) ✓

(33, 56, 65) ✓

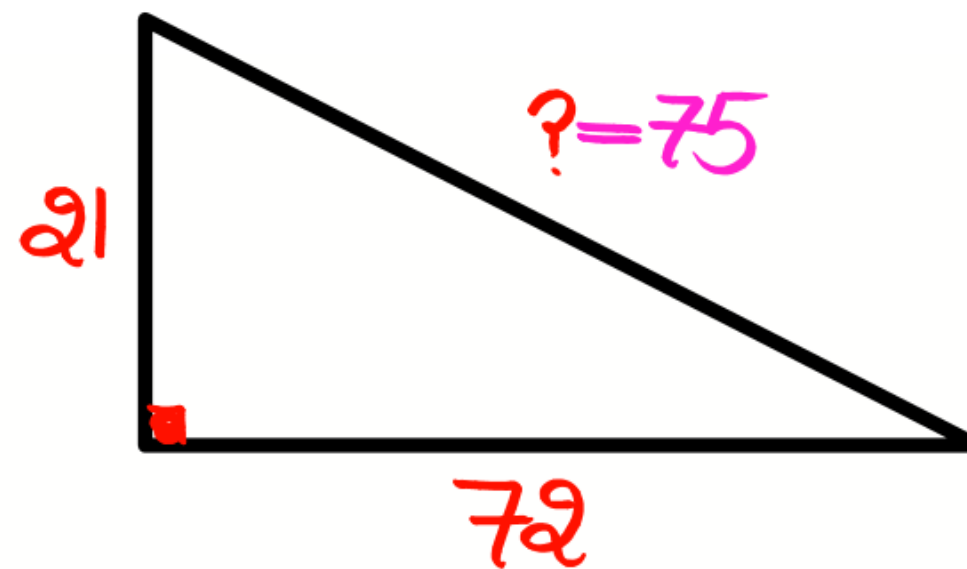
(36, 77, 85) ✓

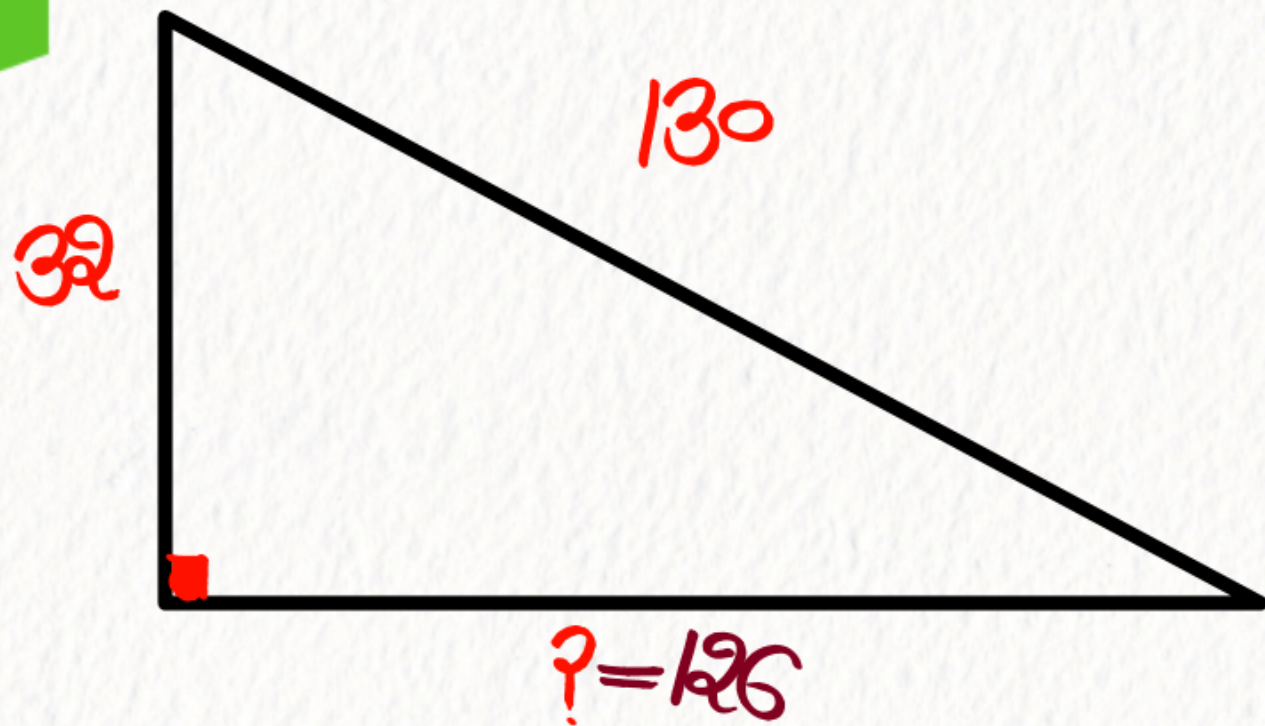
(39, 80, 89) ✓

(48, 55, 73) ✓

(65, 72, 97) ✓

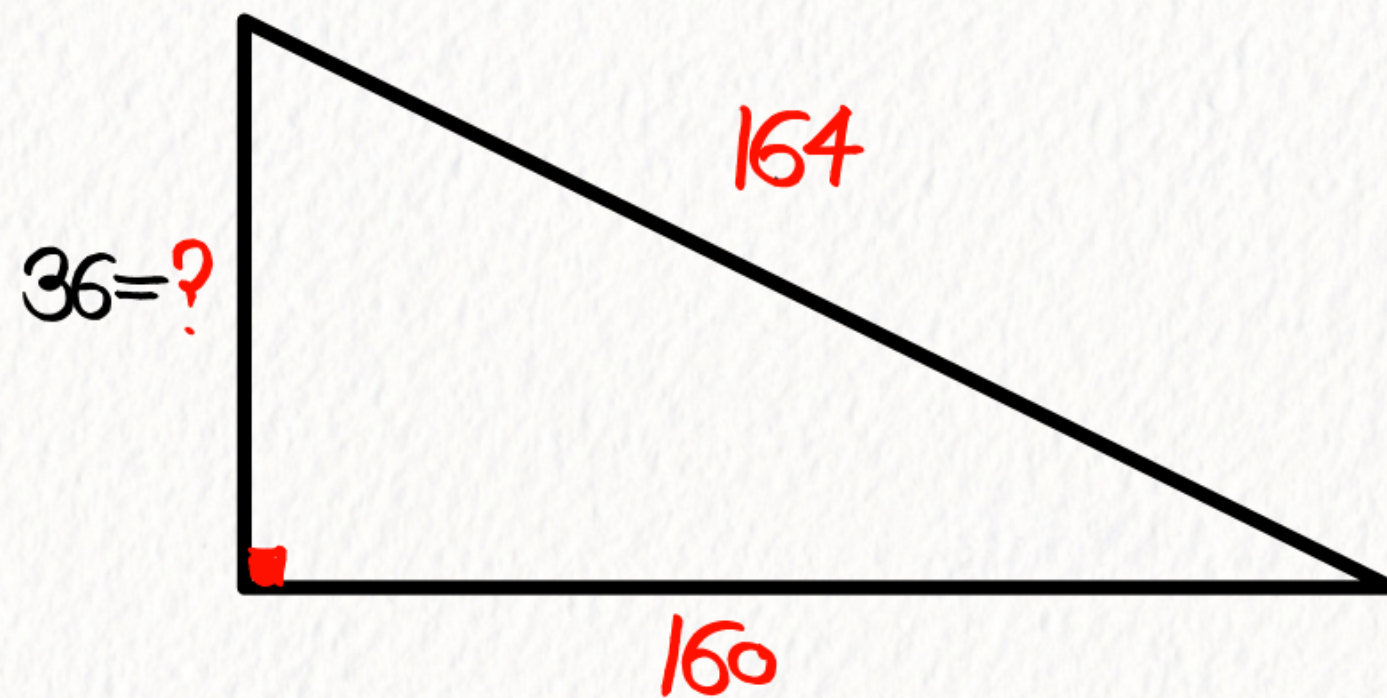
In a triplet largest side is hypotenuse
(त्रिक में सबसे बड़ी भुजा कर्ण होती है)





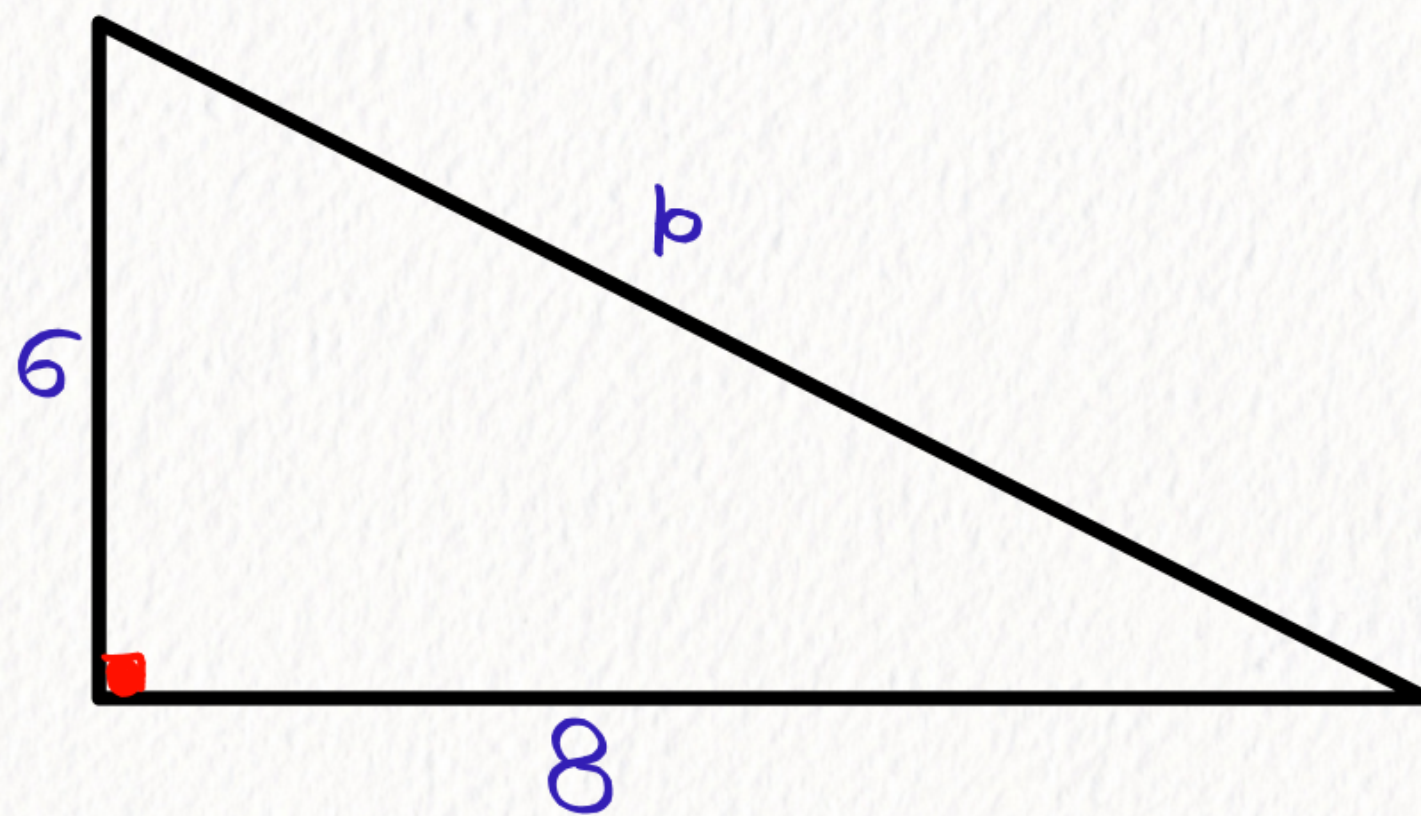
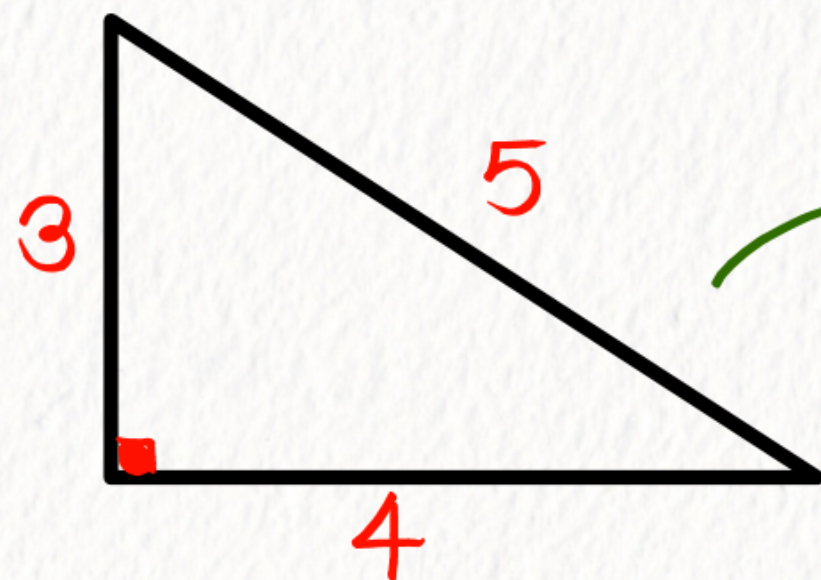
$\div 2$

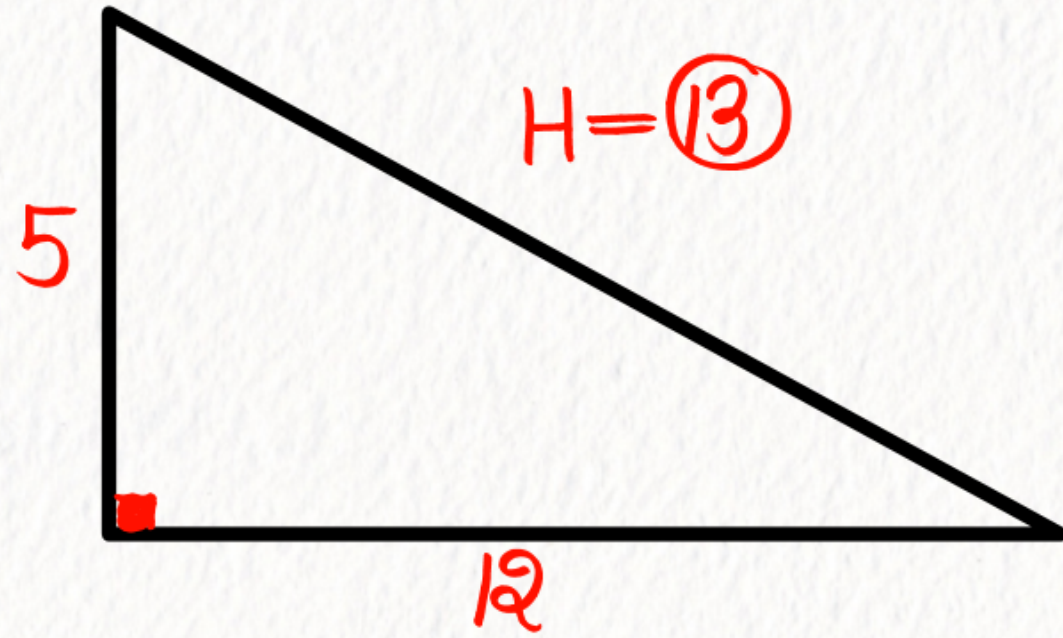
H
~~32, 130~~
 (63, 16, 65)



$\div 4$

~~160, 164~~
 (9, 40, 41) $\times 4$



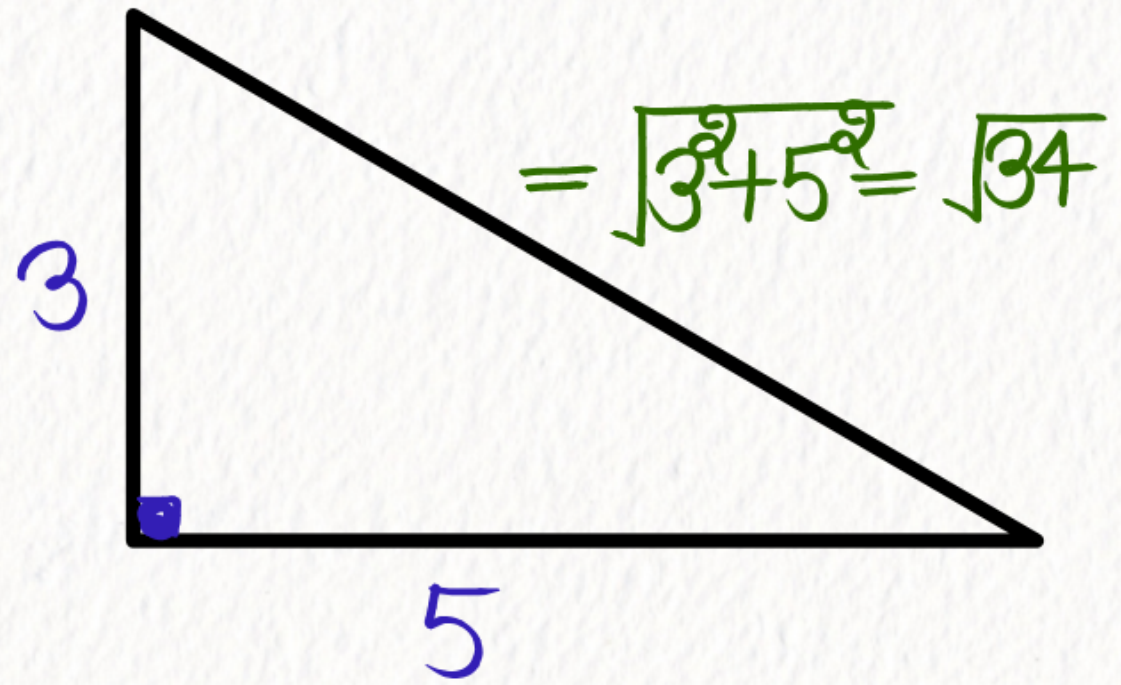


$$H^2 = 5^2 + 12^2$$

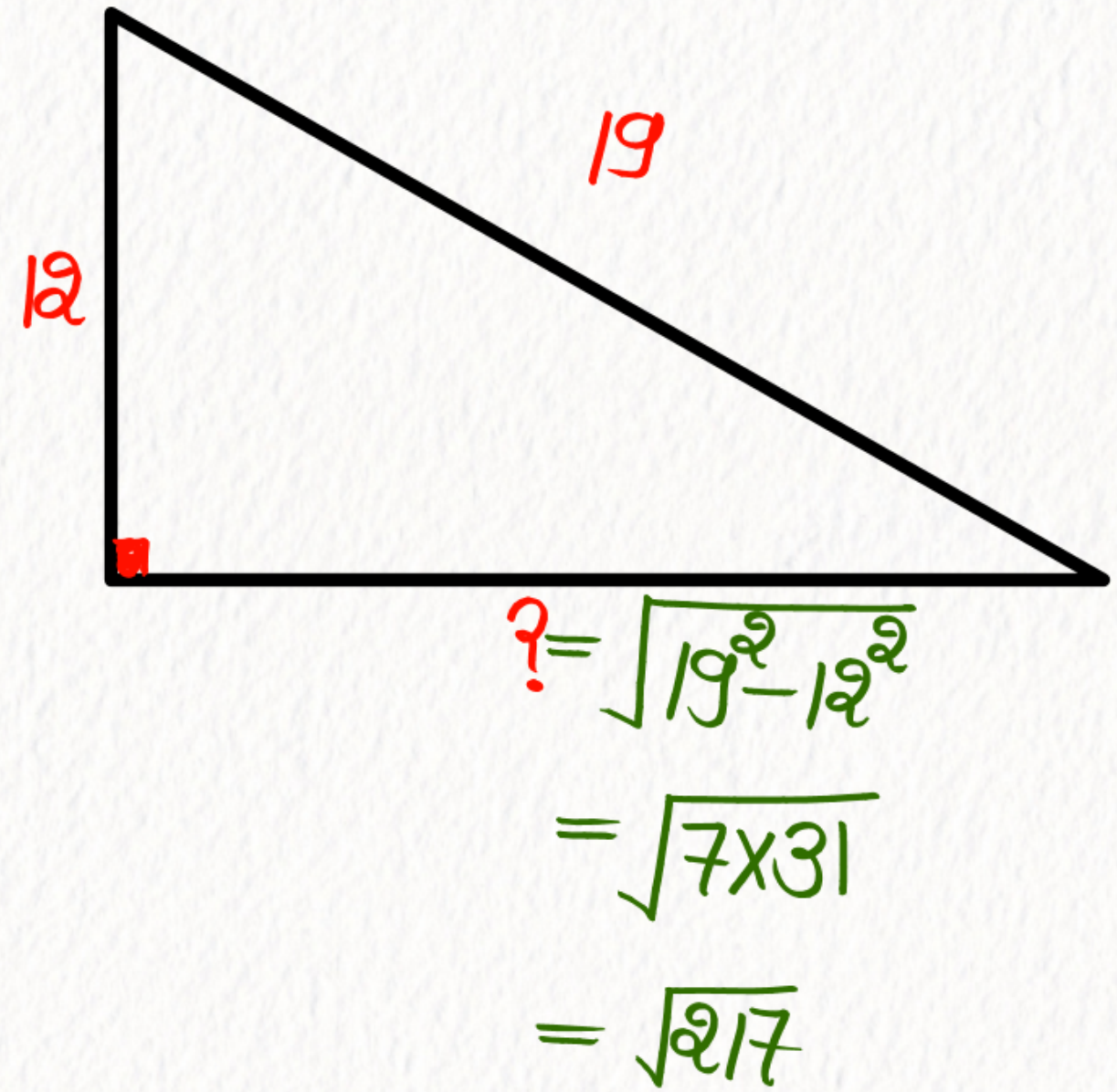
$$H^2 = 25 + 144$$

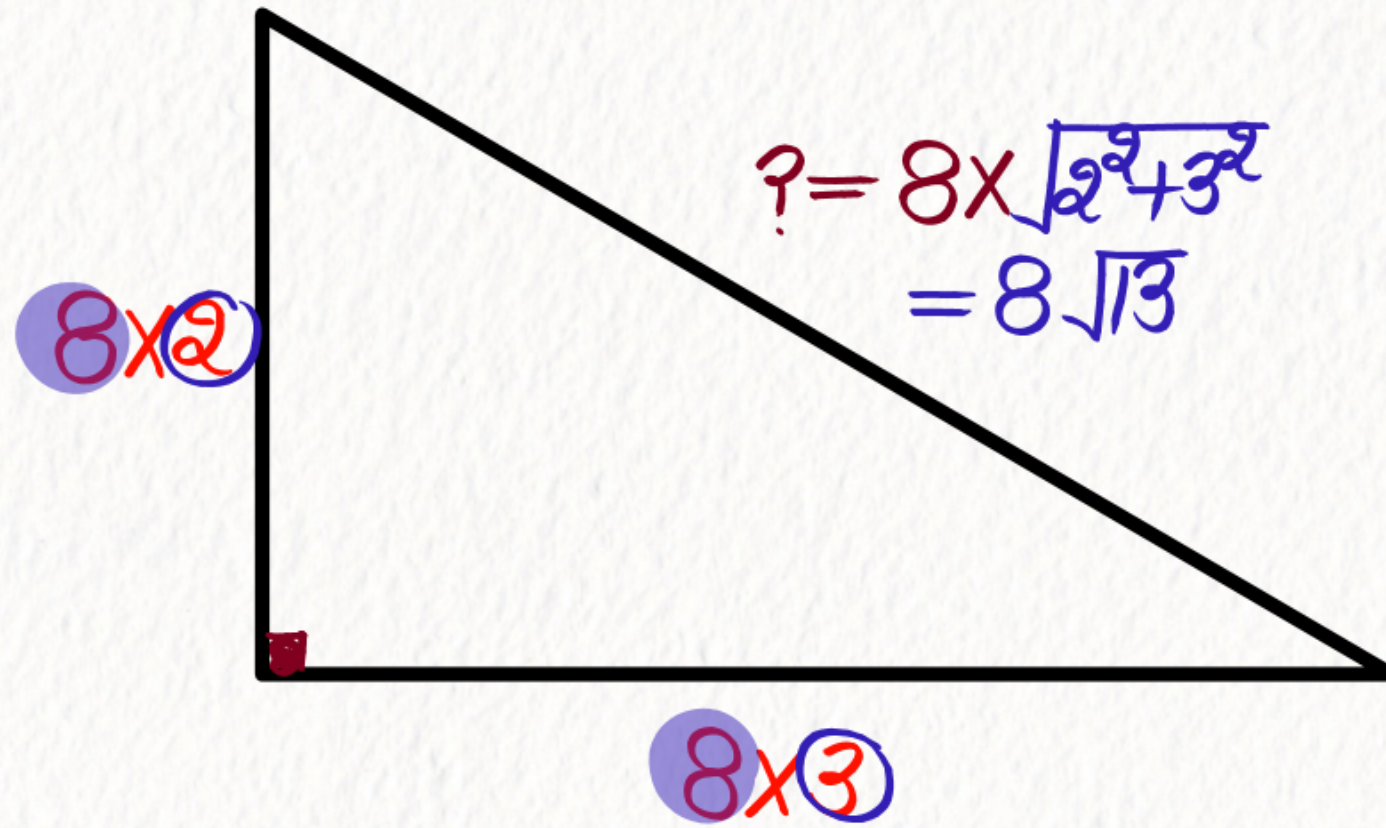
$$H^2 = 169$$

$$H = 13$$



~~(3, 4, 5)~~

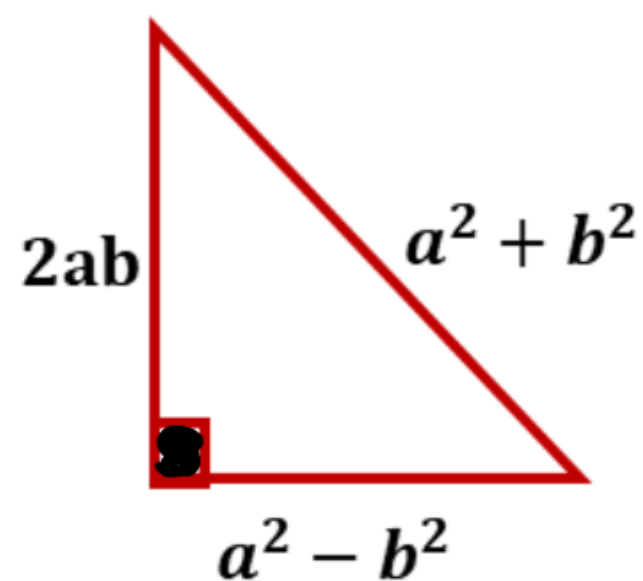




$\div 8$

$$a \rightarrow 3x$$

$$b \rightarrow 4y$$



$$a > b$$

$$a^2 - b^2, 2ab, a^2 + b^2 \rightarrow \text{Triplets}$$

$$a \rightarrow x$$

$$b \rightarrow 1$$

$$x^2 - 1, 2x, x^2 + 1 \checkmark$$

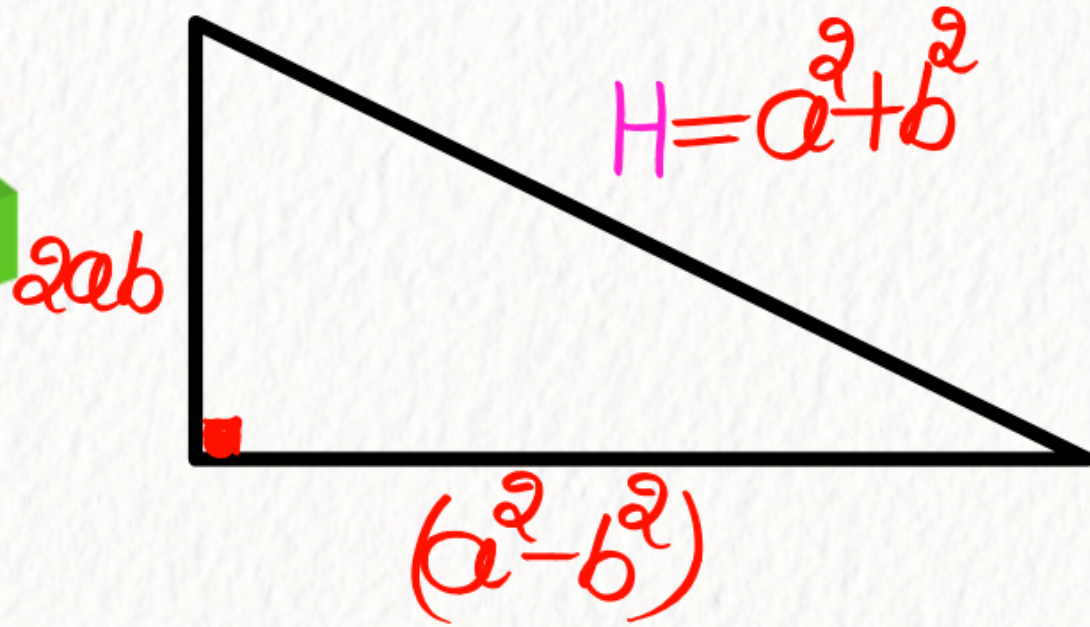
$$9x^2 - 4y^2, 12xy, 9x^2 + 4y^2 \checkmark$$

Multiplication and division of basic triplets results into other triplets

(मूल त्रिक के गुणन और विभाजन से अन्य त्रिक बनाये जा सकते हैं)

$$(3, 4, 5) \xrightarrow{\times 2} (6, 8, 10) \xrightarrow{\times 2} (12, 16, 20)$$

$$(5, 12, 13) \xrightarrow{\times 2} (10, 24, 26) \xrightarrow{\times 1.5} (15, 36, 39)$$



$$(a^2-b^2)^2 + (2ab)^2 = H^2$$

$$a^4 + b^4 - 2a^2b^2 + 4a^2b^2 = H^2$$

$$a^4 + b^4 + 2a^2b^2 = H^2$$

$$(a^2)^2 + (b^2)^2 + 2 \times a^2 \times b^2$$

$$(a^2+b^2)^2 = H^2$$