

Pythagorean Triples - Notes and Steps

Key idea

A **Pythagorean triple** is three whole numbers with $a^2 + b^2 = c^2$. The triangle they make is right-angled.

Check it

3, 4, 5 is a triple because $3^2 + 4^2 = 9 + 16 = 25 = 5^2$.

Triples to know

3, 4, 5 5, 12, 13
8, 15, 17 7, 24, 25

Common mistake

Numbers close to a triple are not always one.

Check by squaring: 6, 8, 11 fails since $6^2 + 8^2 = 100 \neq 11^2$.

 = **copy this into your book.** Boxes without a pencil are just to read.

Scaling a Triple



Key idea

Multiply **every** side of a triple by the same number.

The new triangle is still a triple, still right-angled.

Scale up

Double 5, 12, 13:

10, 24, 26 is still a triple.

Recognise a scaled triple

12, 16, 20 is 3, 4, 5 with every side $\times 4$.

Common mistake

Do not scale just one side.

A triple stays valid only when all three sides use the same factor.



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