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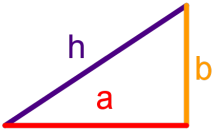

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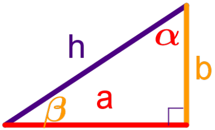
We label the angles α and β



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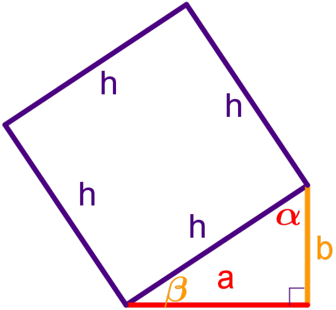

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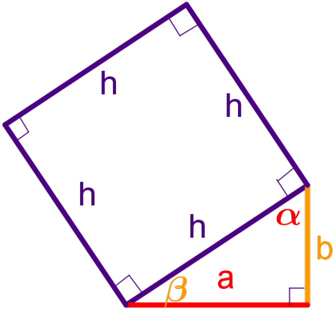

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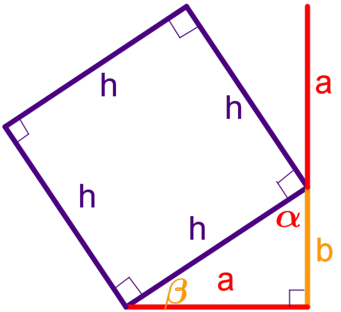

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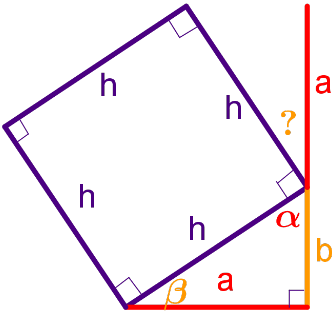

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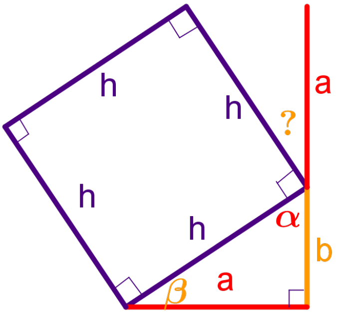

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To find this angle, we use that $90 + \alpha + \beta = 180$

And $90 + \alpha + ? = 180$

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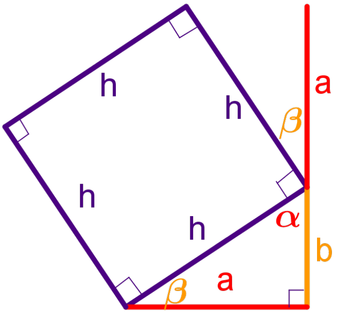

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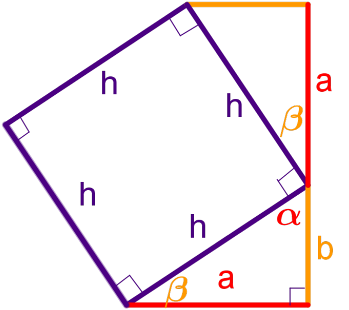

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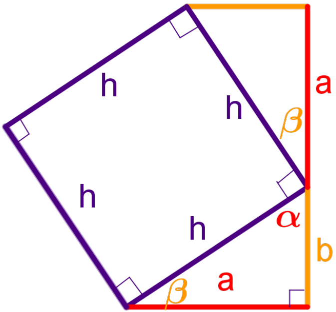

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The triangles share h, β, a

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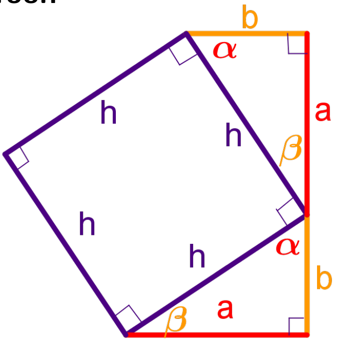

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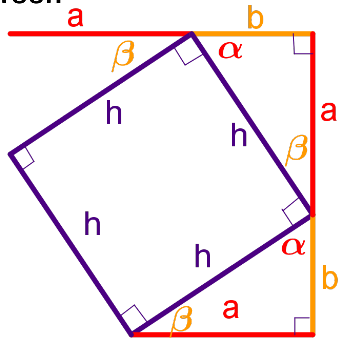

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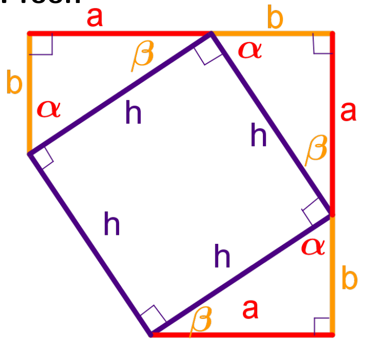

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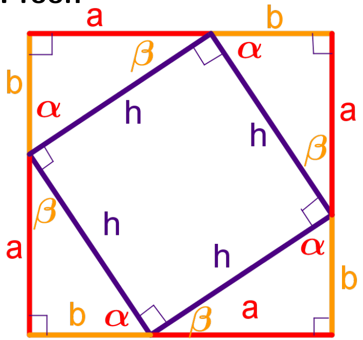

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Continuing this process

We get 4 congruent triangles

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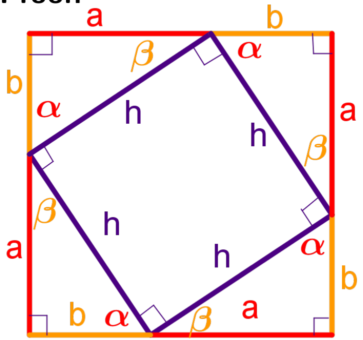

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Recall: $A_{\Delta} = \frac{1}{2} base \cdot height$

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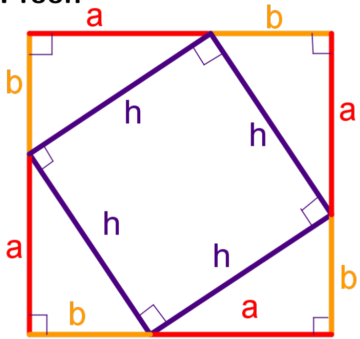

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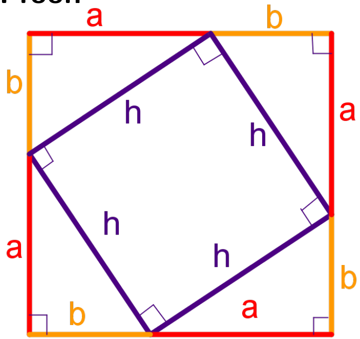

Summary:
We get 4 congruent triangles
$A_{\Delta} = \frac{1}{2}ab$

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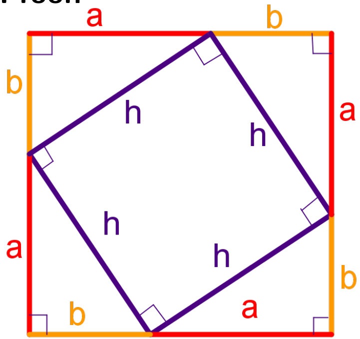

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We get 4 congruent triangles
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We can compute the area of the large square by computing the area of the smaller square and four triangles

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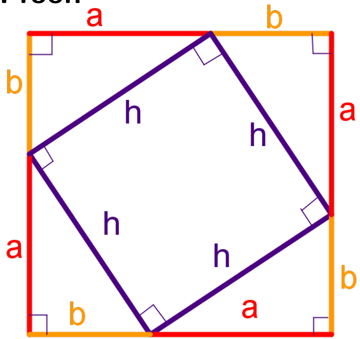

Summary:
We get 4 congruent triangles
$A_\Delta = \frac{1}{2}ab$

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$$A = h^2 + 4 \cdot \frac{1}{2}ab$$

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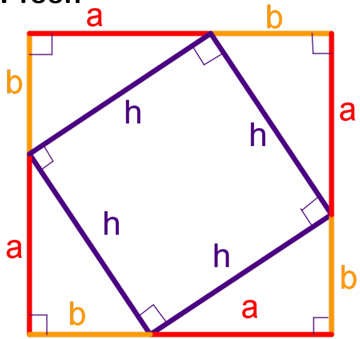

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$A_\Delta = \frac{1}{2}ab$

We can compute the area of the large square by computing the area of the smaller square and four triangles

$$A = h^2 + 4 \cdot \frac{1}{2}ab = h^2 + 2ab$$

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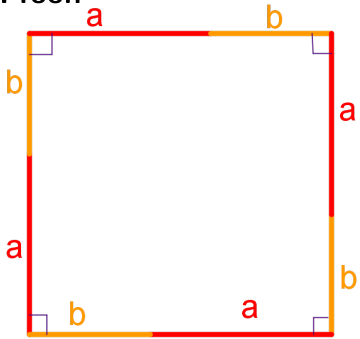

Summary:

We get 4 congruent triangles

$A_\Delta = \frac{1}{2}ab$

We can compute the area of the large square by computing the area of the smaller square and four triangles

We can also compute the area of the large square by computing the area directly as a square with sides $a + b$

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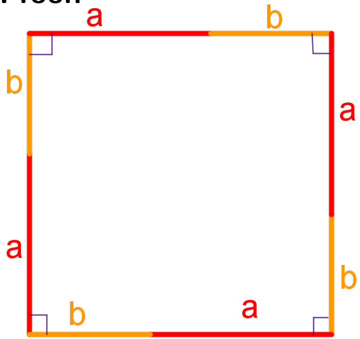

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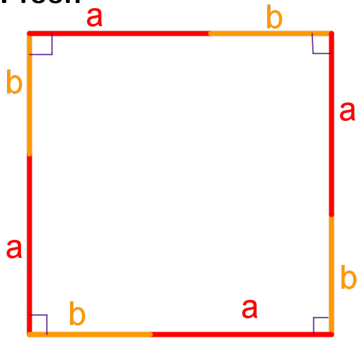

Summary:

We get 4 congruent triangles

$A_\Delta = \frac{1}{2}ab$

Recall how to square $(a + b)$

We can compute the area of the large square by computing the area of the smaller square and four triangles

We can also compute the area of the large square by computing the area directly as a square with sides $a + b$

$$a^2 + b^2 + 2ab = (a + b)^2 = A = h^2 + 4 \cdot \frac{1}{2}ab = h^2 + 2ab$$

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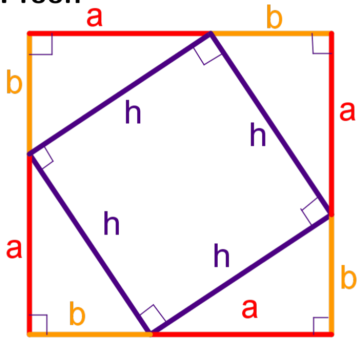

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