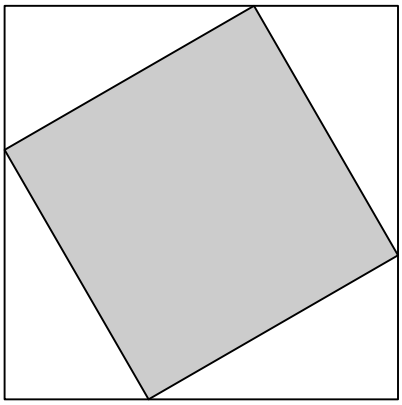
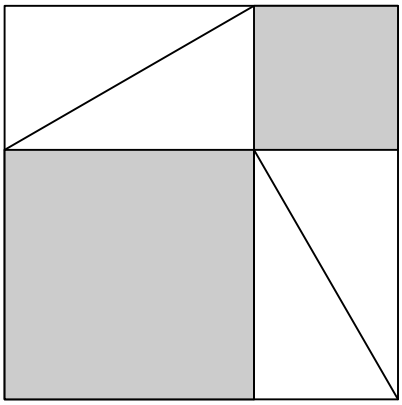
Mathematics 308—January 7, 1996

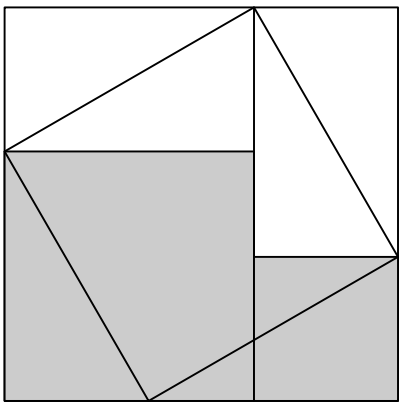
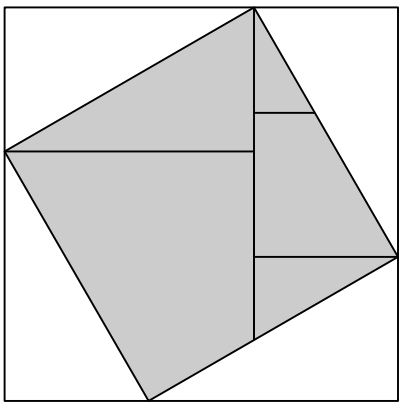
Another proof of Pythagoras' Theorem

We can draw a square of sides $a+b$ and partition it in two ways.





Algebraically this says that

$$\begin{aligned}(a+b)^2 &= a^2+b^2+2ab \\ &= a^2+b^2+4\,\frac{ab}{2} \\ &= c^2+4\,\frac{ab}{2} \\ c^2 &= a^2+b^2\ .\end{aligned}$$

If we shift things around a bit and overlay the two diagrams we can partition the square of side c into chunks which can fit together to make up the two smaller squares.