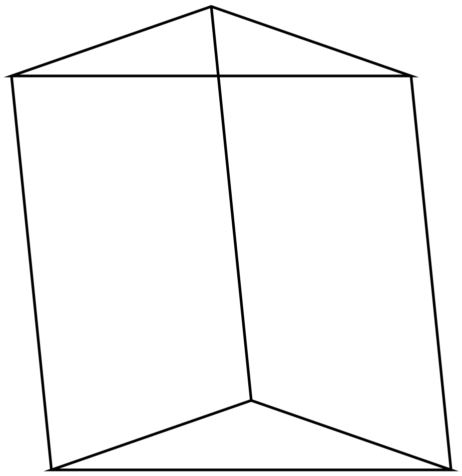
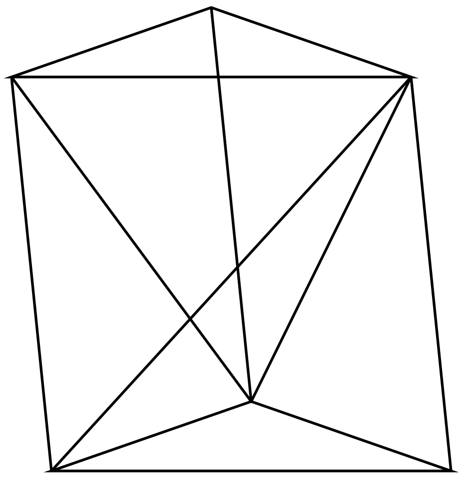
Finally, the reason for all this madness! We shall now see that any prism with a triangular based is composed of three equal pyramids with triangular bases, which is Euclid XII prop.#7

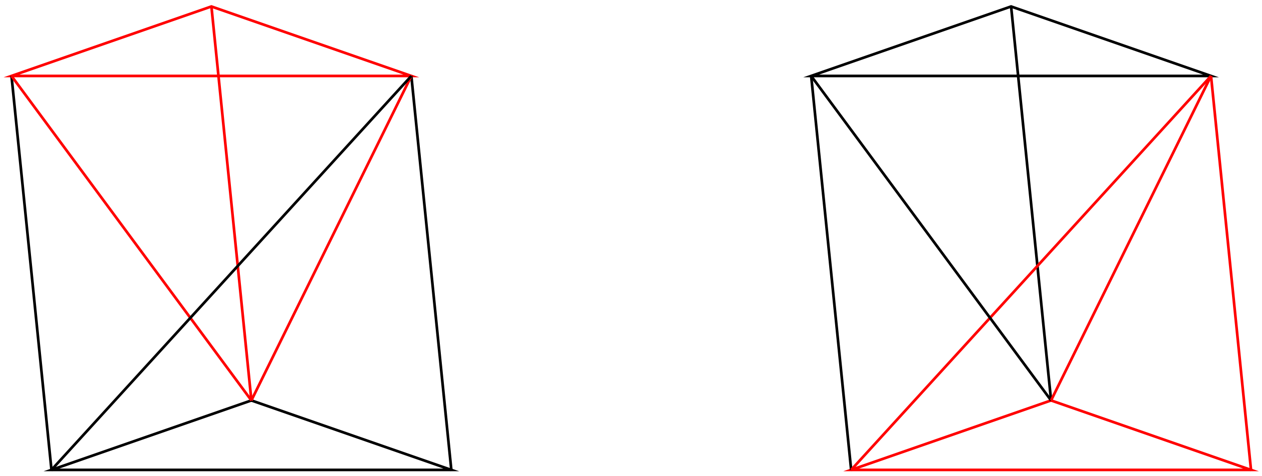
Say you have a prism with triangular base like so:



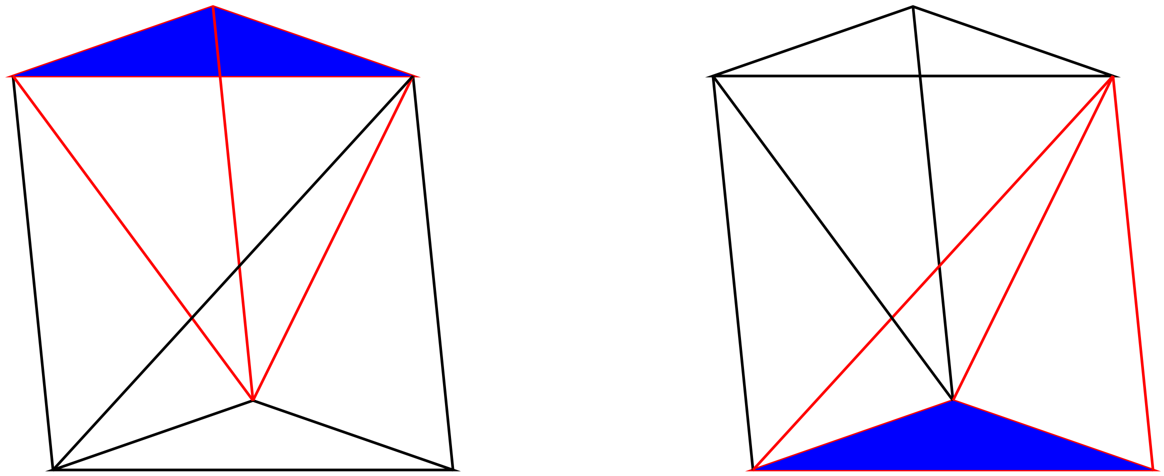
Construct lines as shown:



Claim: red pyramid = red pyramid



Reason: bases in blue are equal,
and heights are equal (each height is equal to the height of the prism).
Therefore, according to our specific case of Euclid XII prop. #5
that we proved, they are equal.



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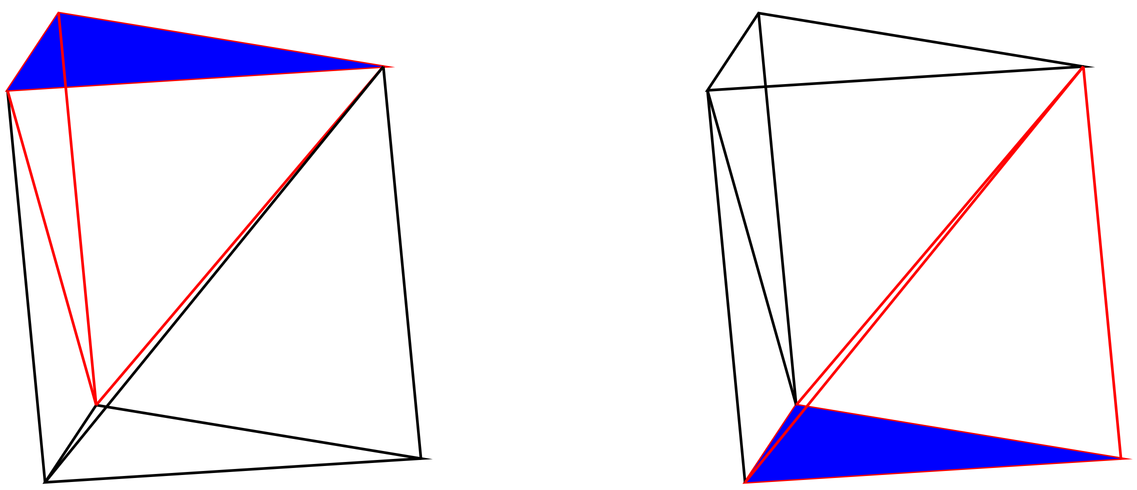

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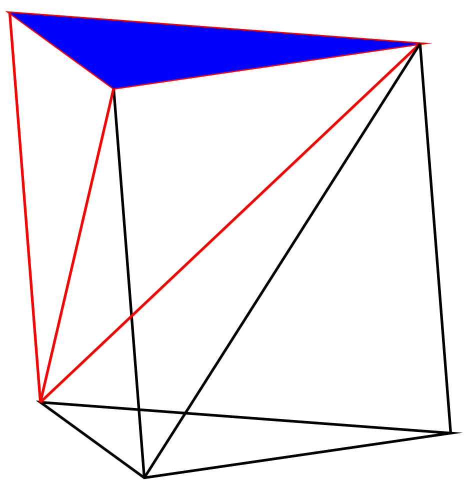

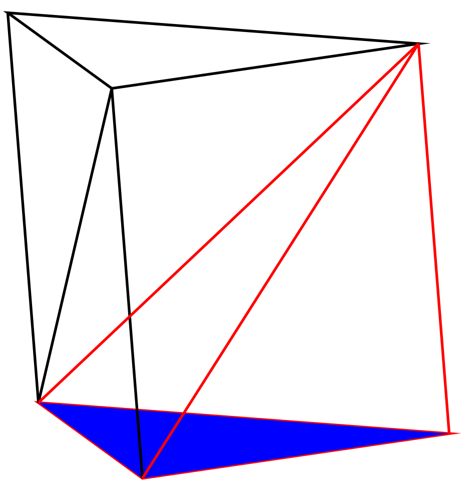

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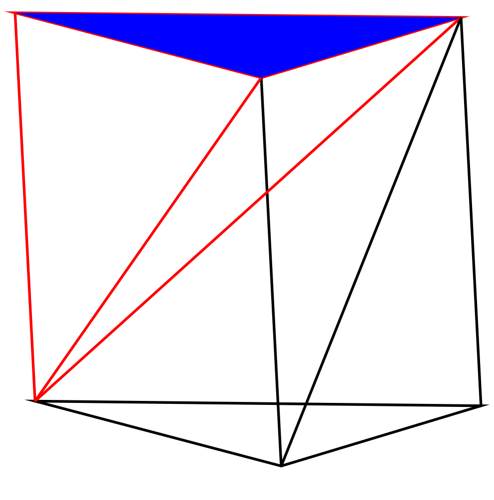

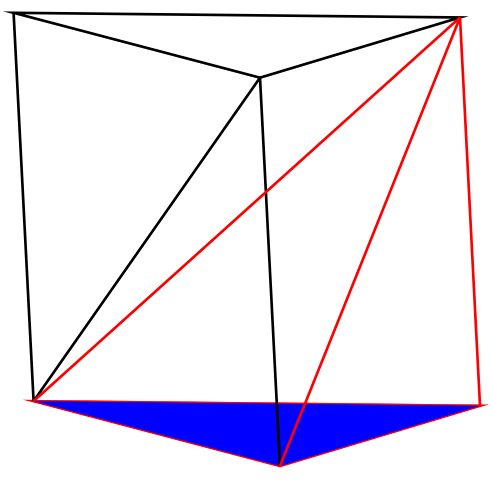

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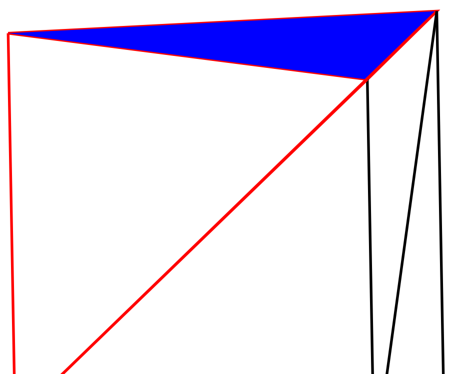

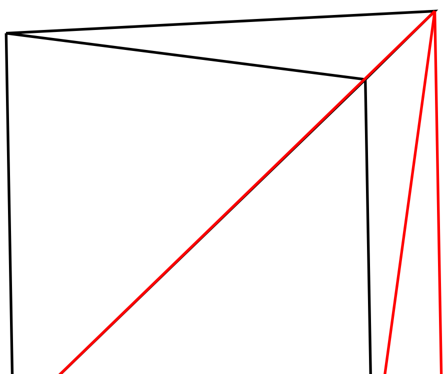

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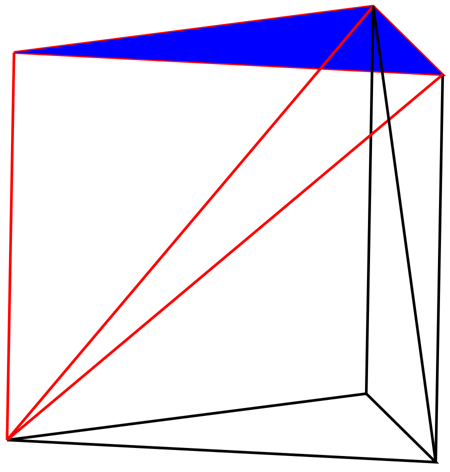

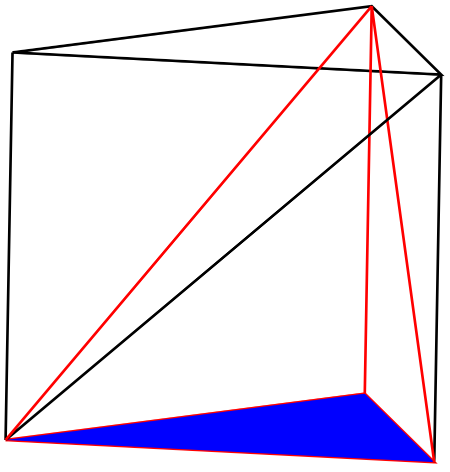

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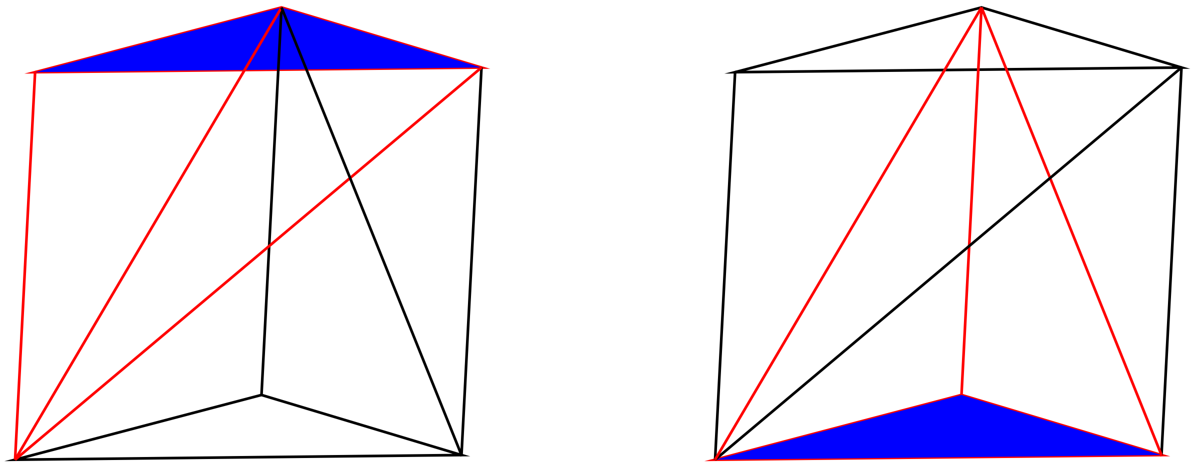

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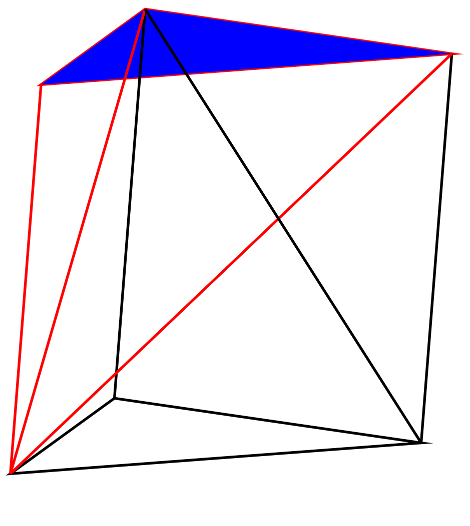

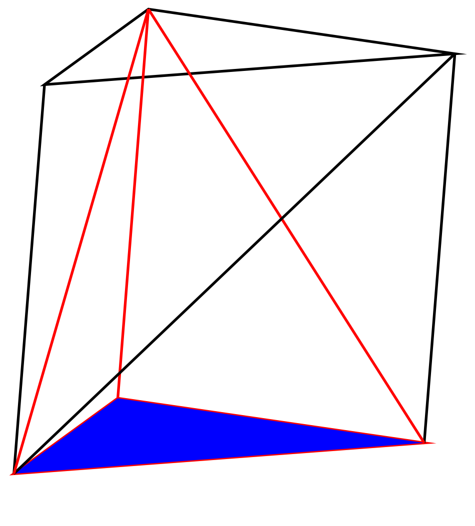

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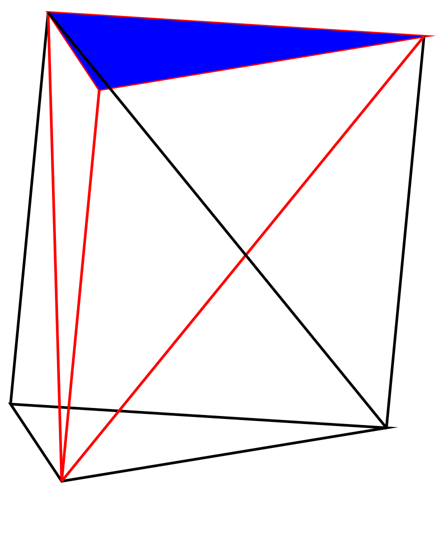
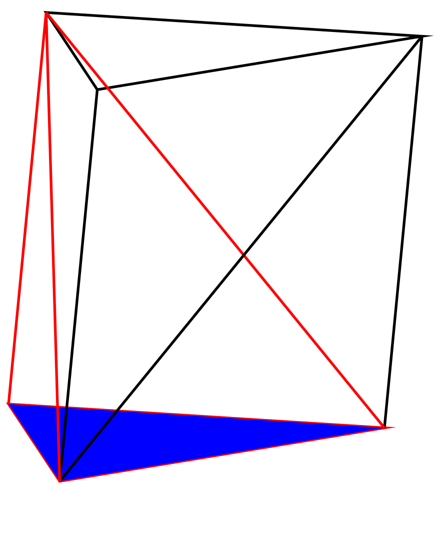

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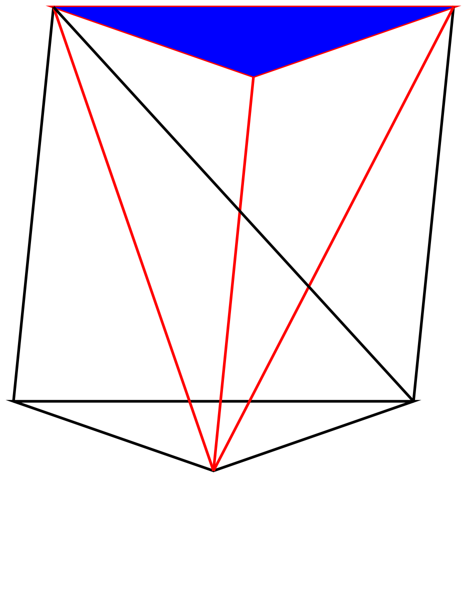

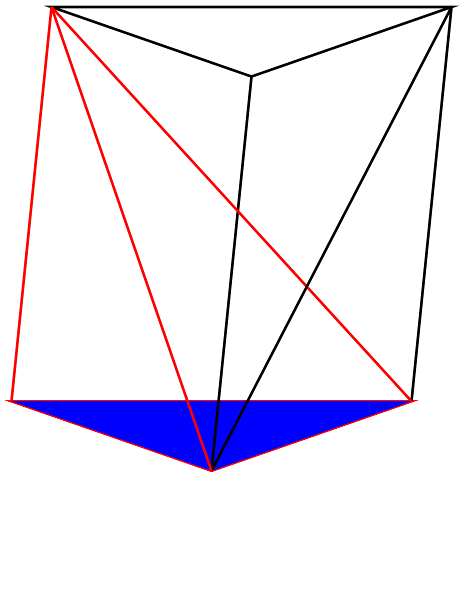

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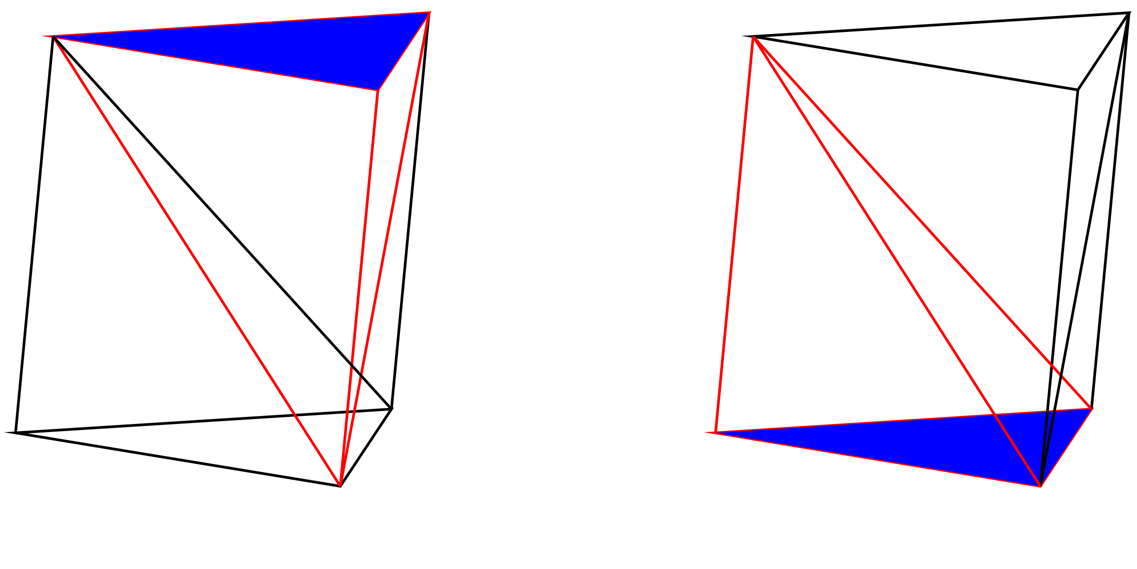

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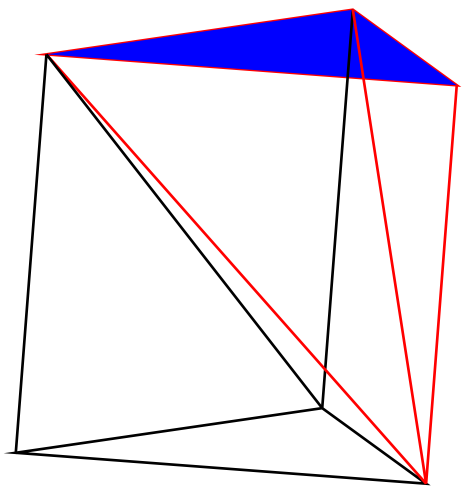

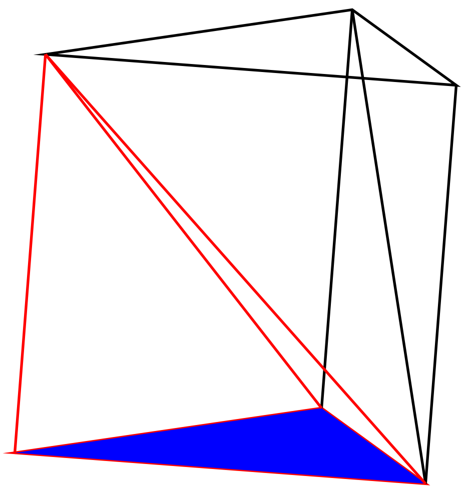

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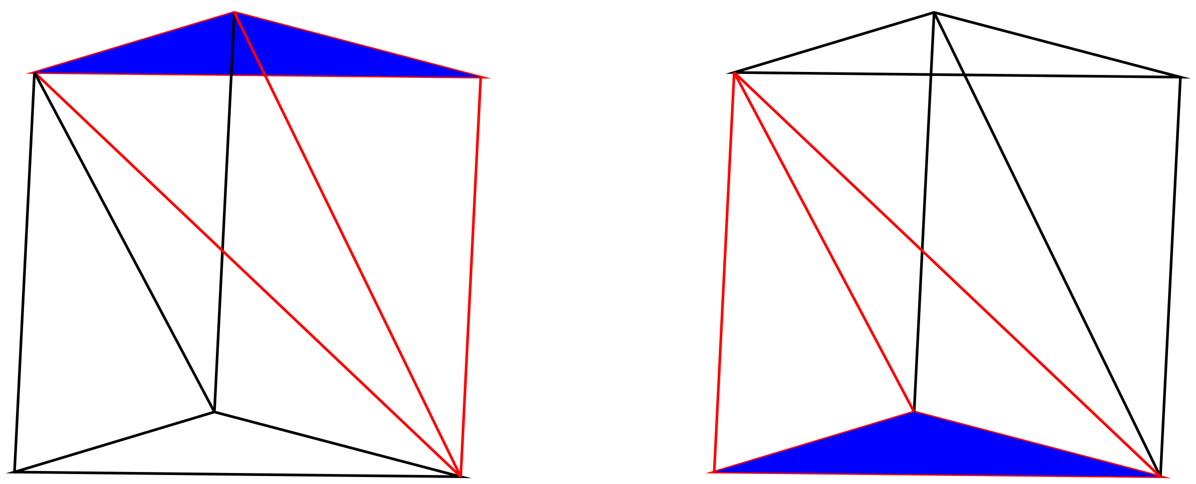

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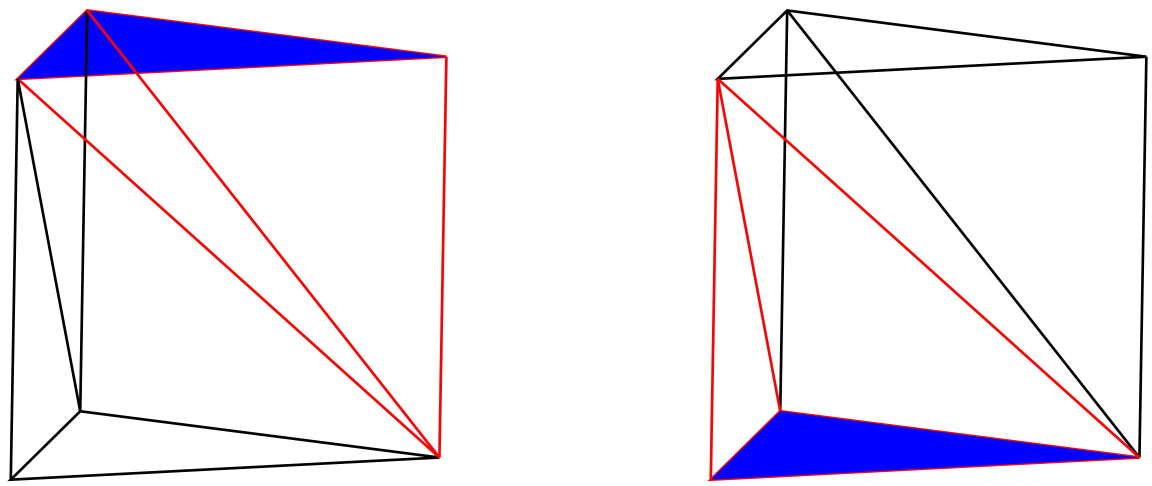

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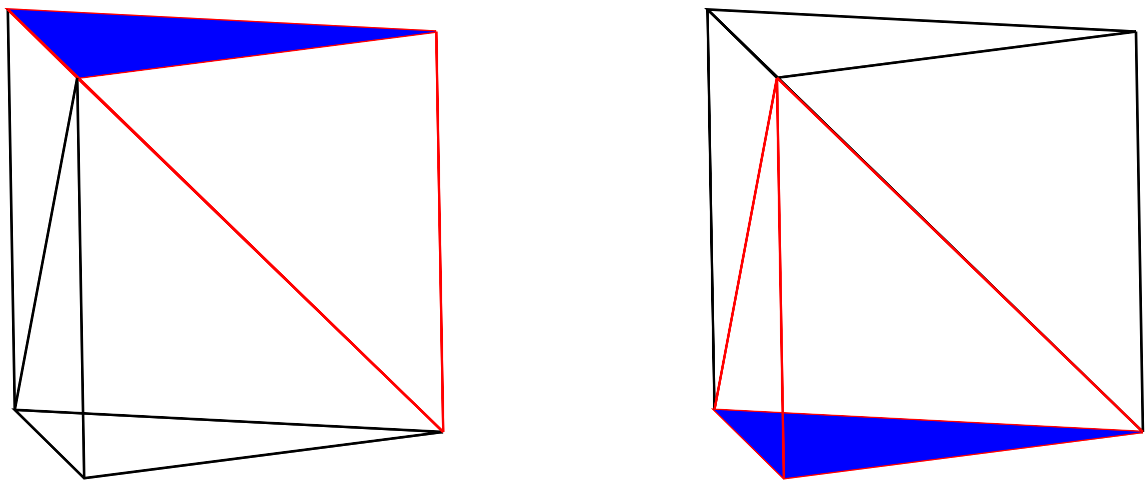

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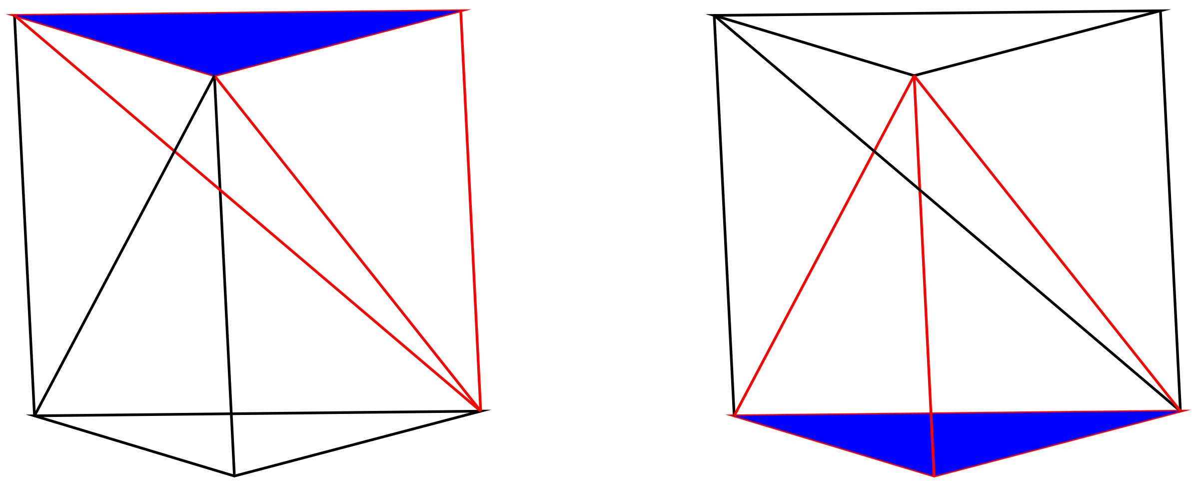

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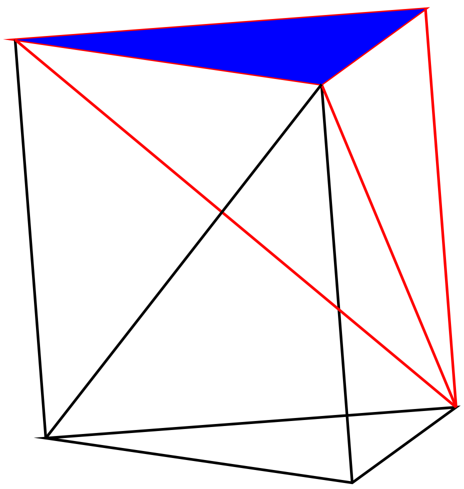

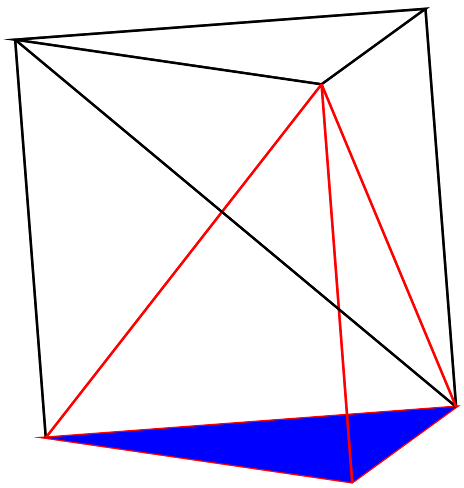

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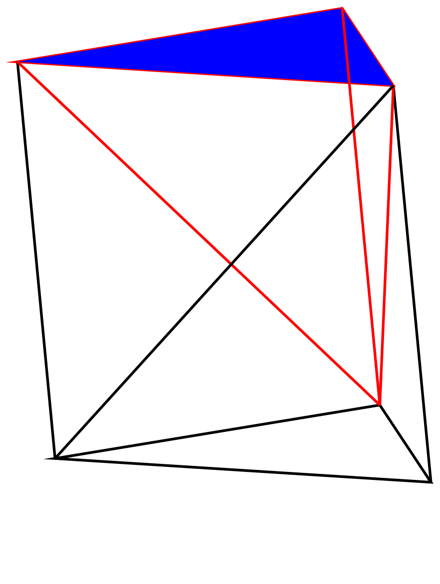

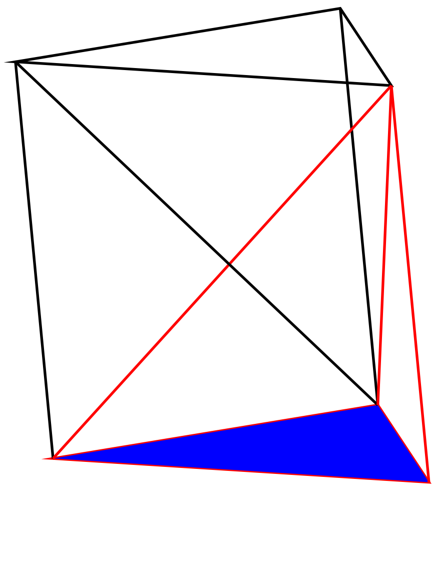

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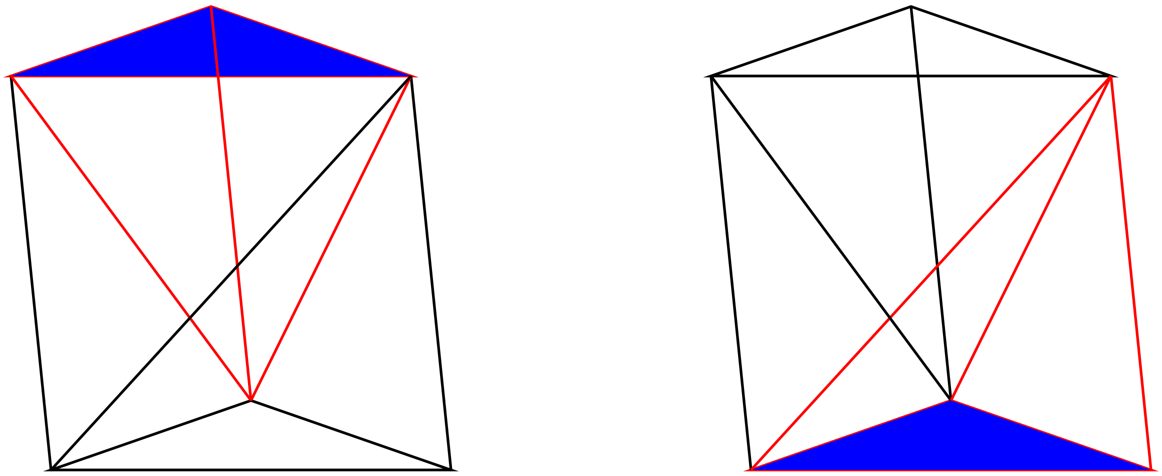
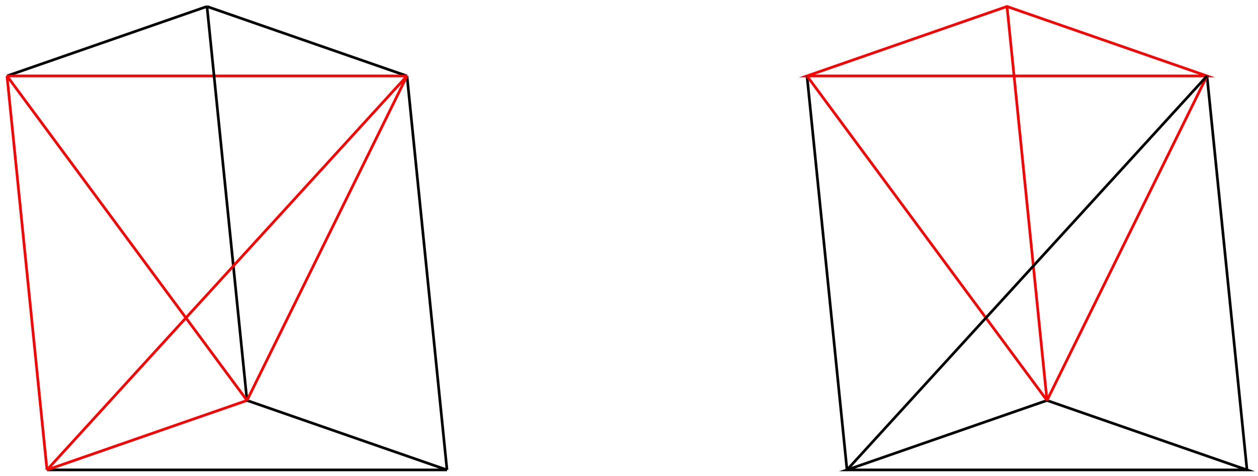
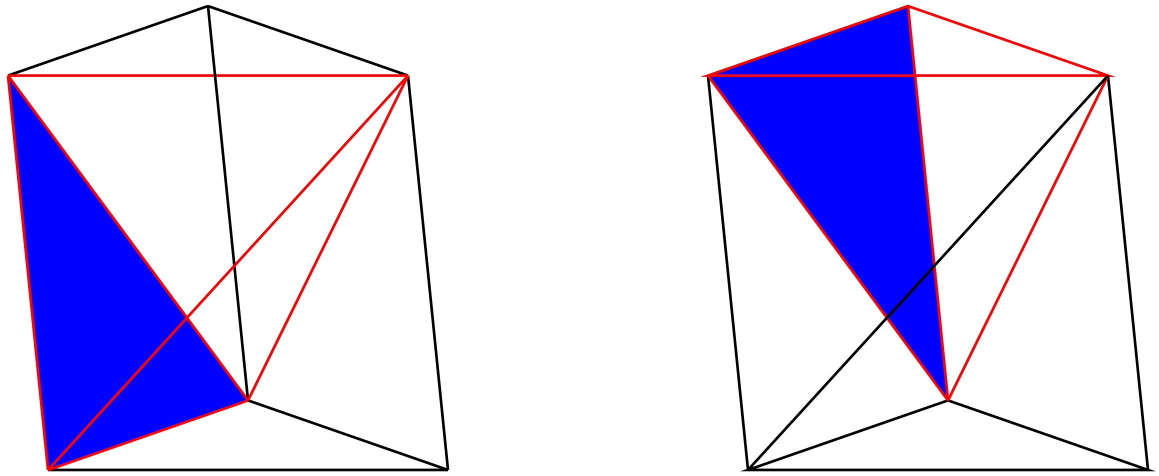


Claim: **red pyramid = red pyramid**



Reason: By Euclid I prop #34, we know that the blue bases are equal, and clearly the heights are equal since their bases are parrallel and they share the same vertex



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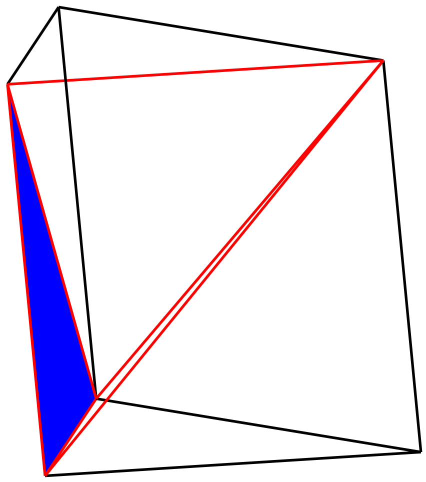

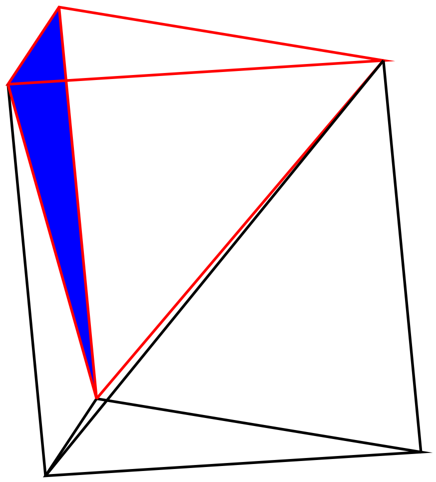

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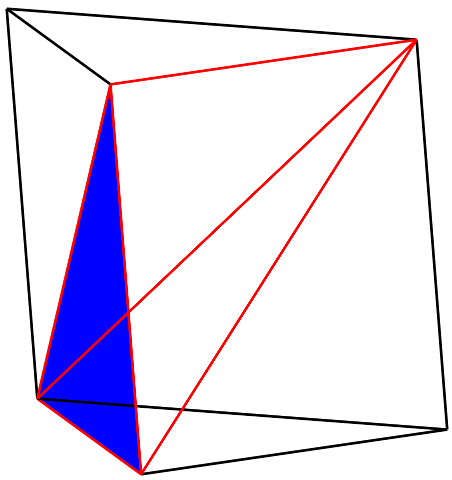

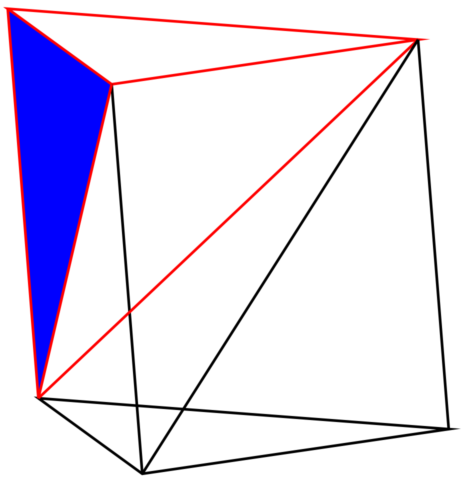

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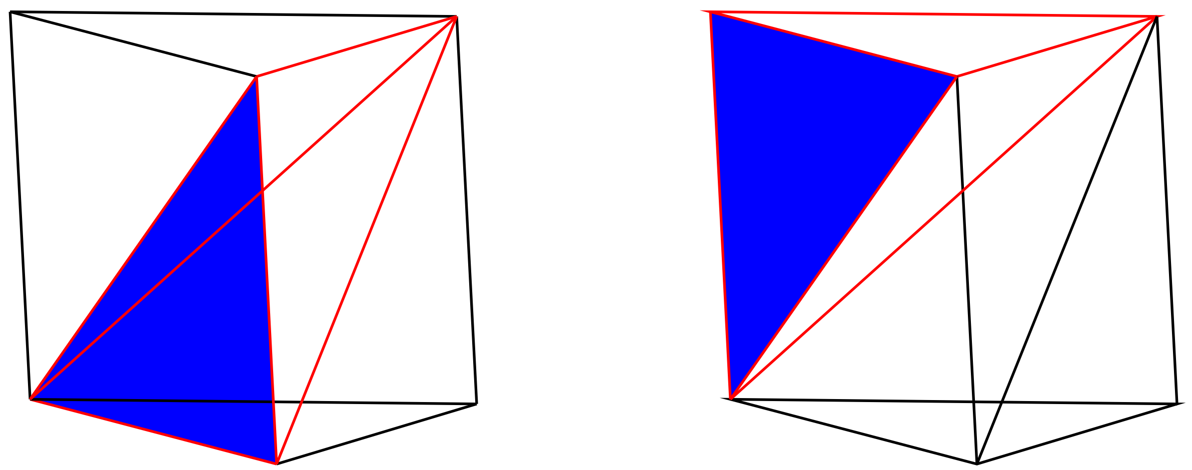

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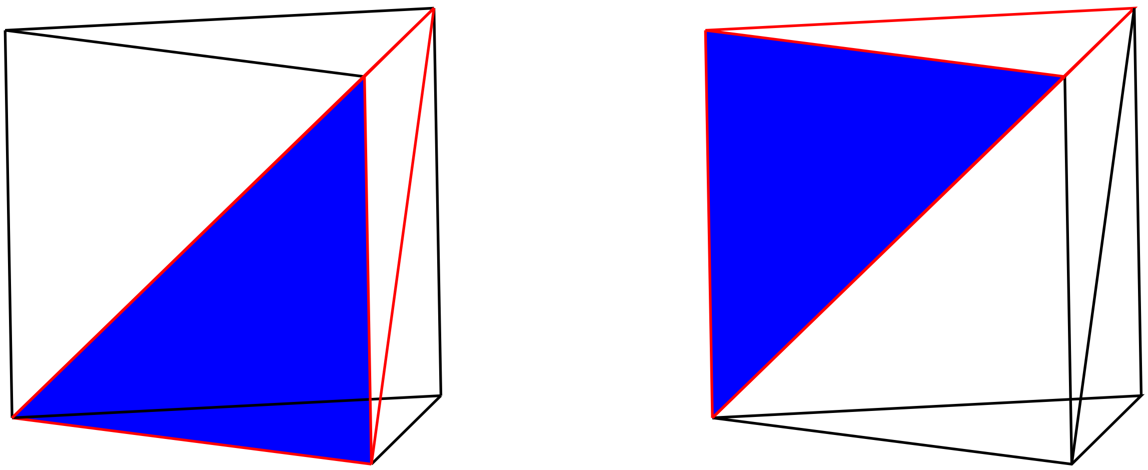

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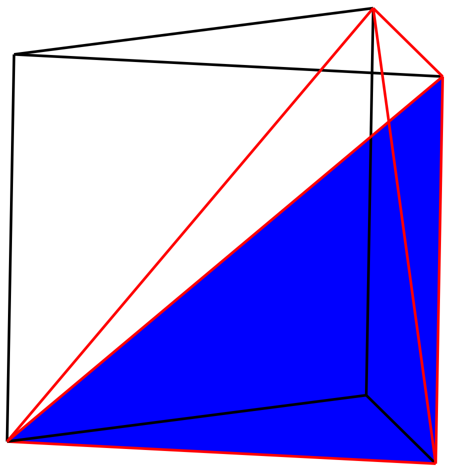

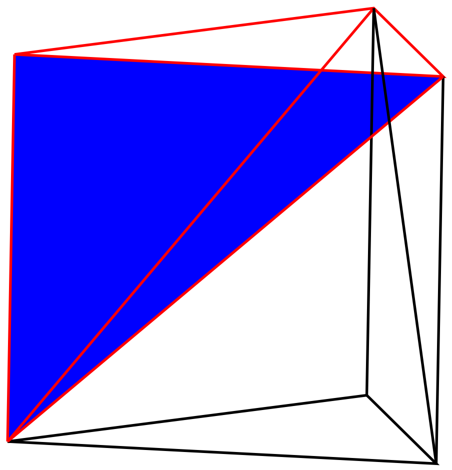

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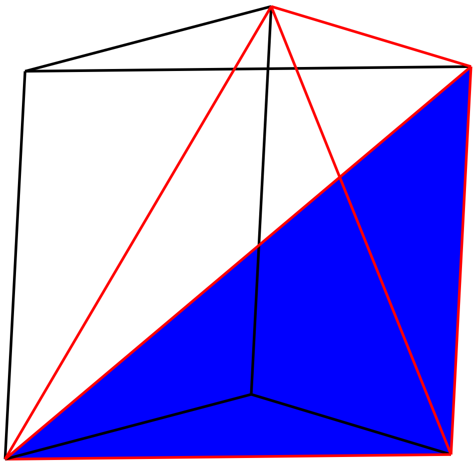

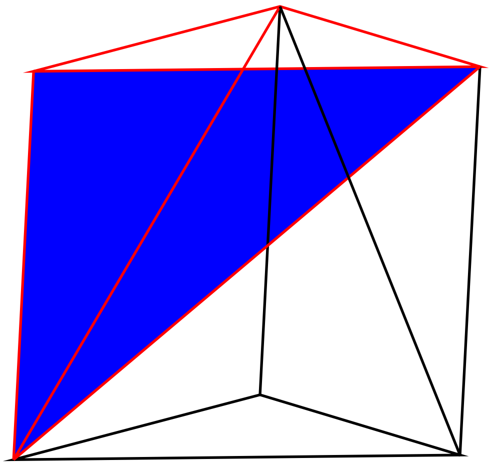

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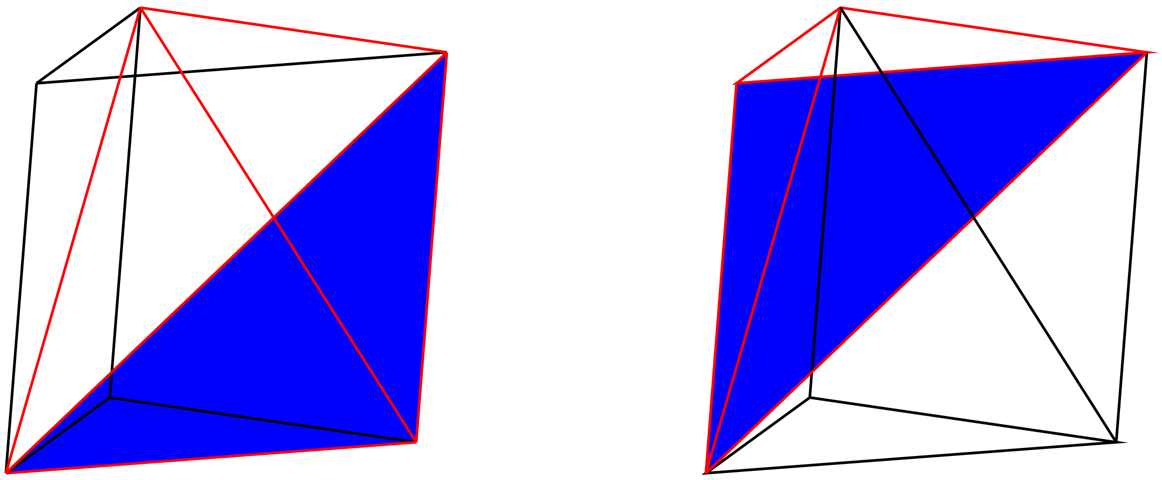

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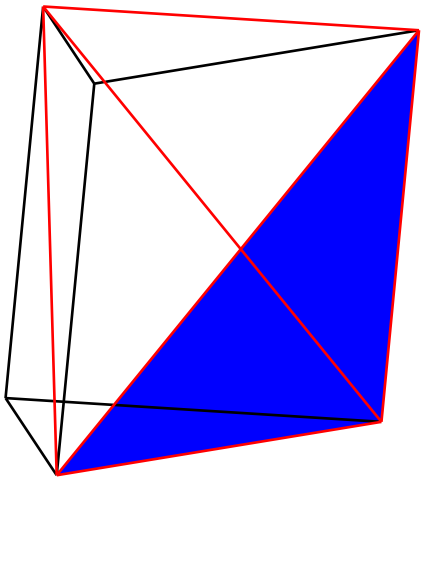

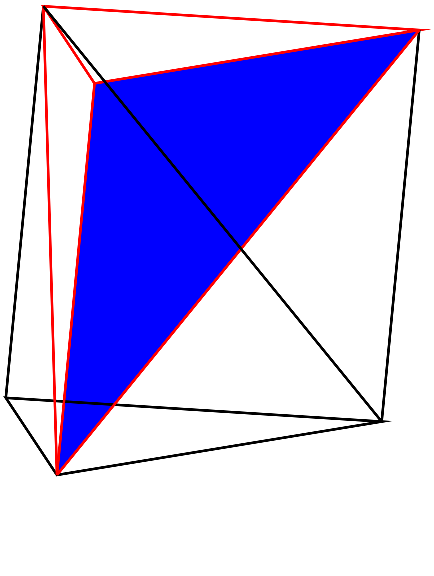

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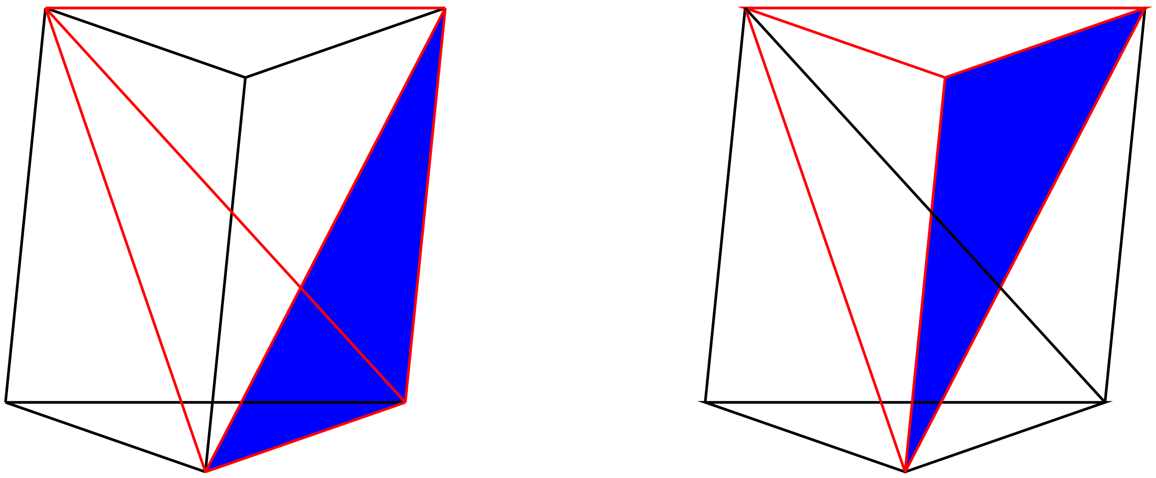

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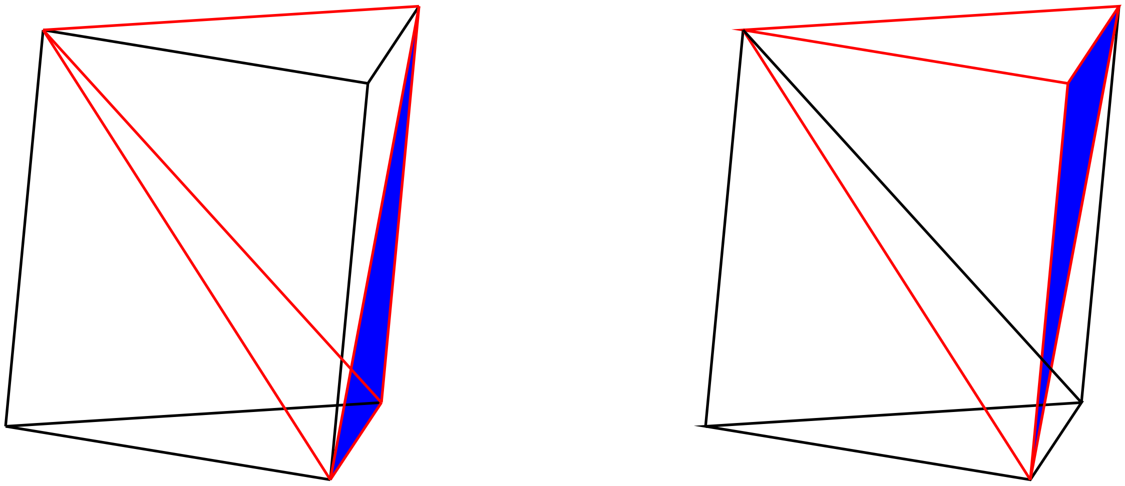

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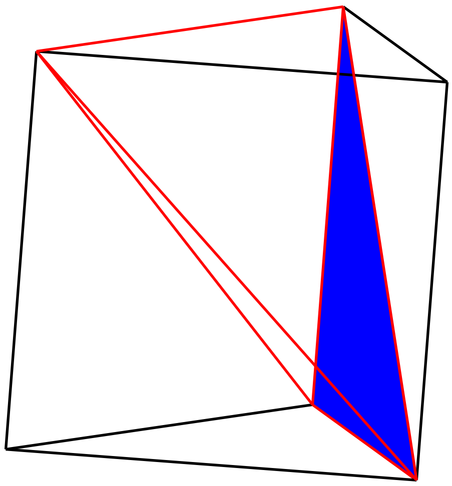

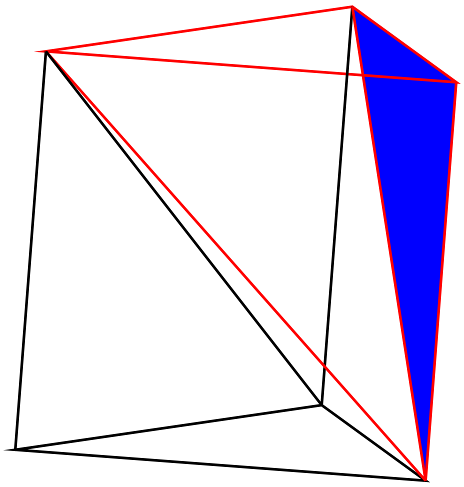

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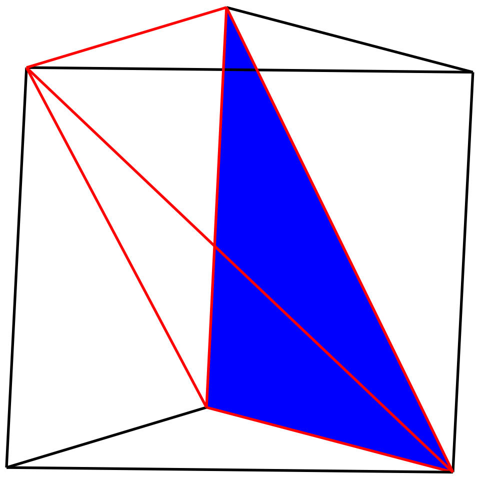

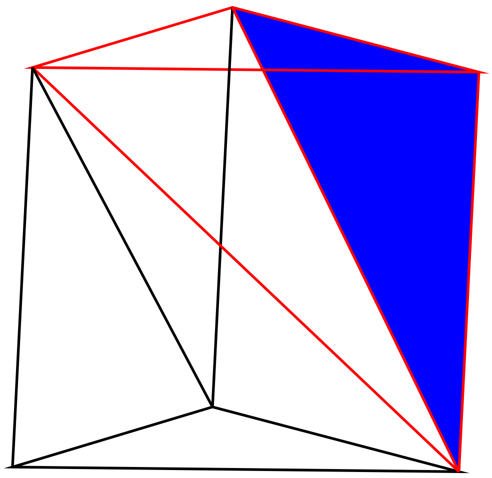

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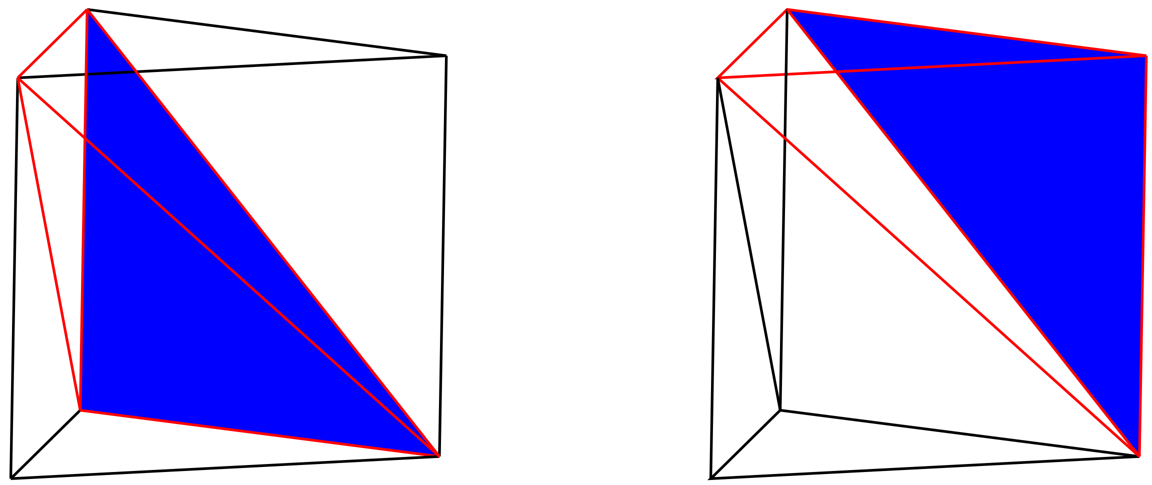

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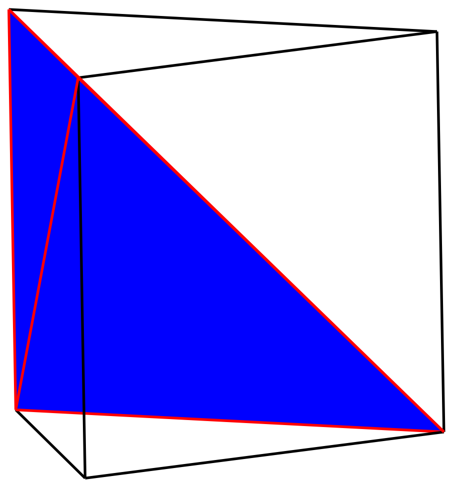

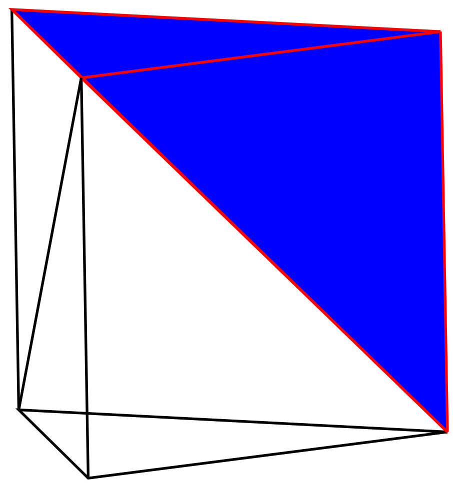

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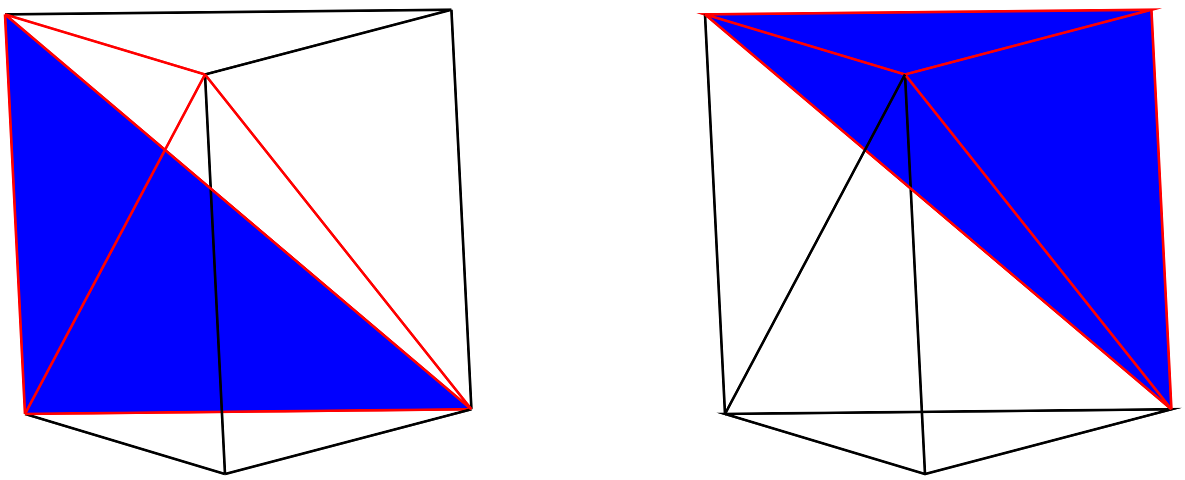

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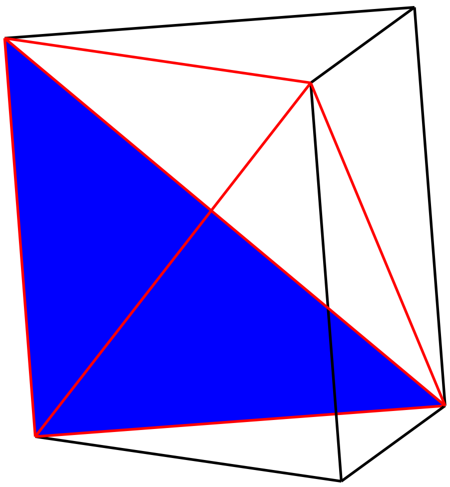

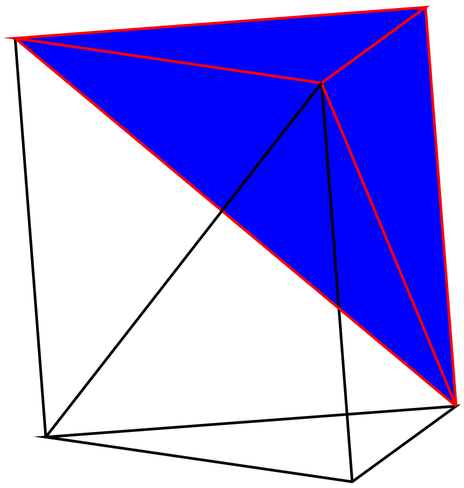

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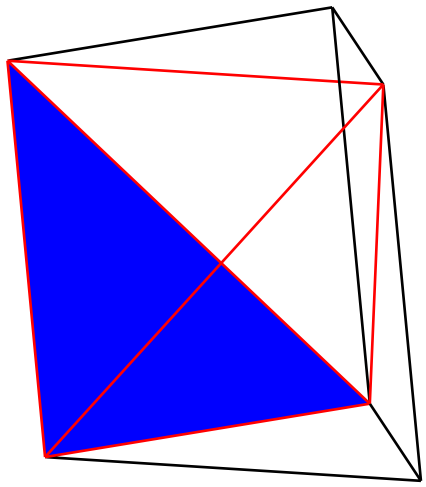

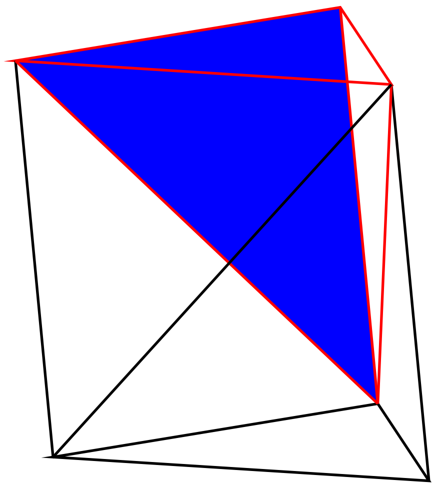

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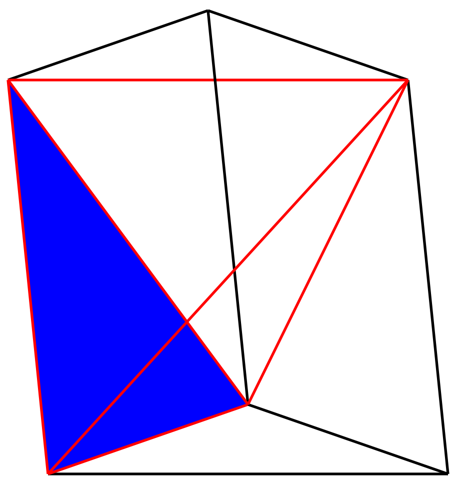
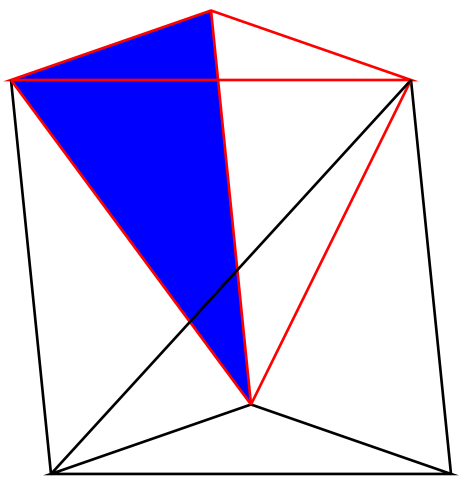
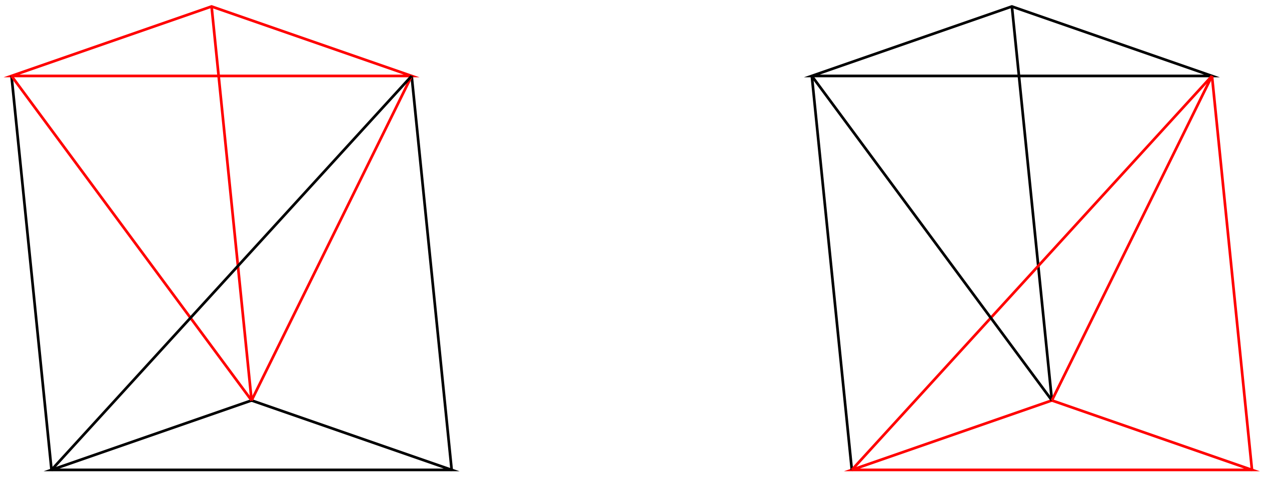




So red pyramid = red pyramid



And...red pyramid = red pyramid