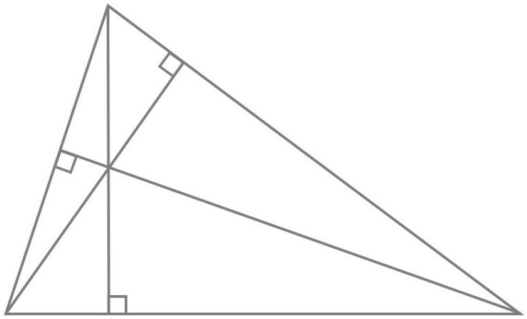
A Triangle of Prime Opportunity

go figure

Suppose we have a triangle, and suppose we also draw its altitudes (that is, the heights if we treat each side length as the base):



If the three side lengths and the three altitudes are all integers AND they're all different from each other, is it ever possible for four of the six numbers to be prime?

Nicki and Dave disagree what the answer should be: Dave thinks it should be possible, while Nicki thinks it's probably impossible. Who is right? How could they explain their solution convincingly to the other person?