## The old cane factory chimney

Sherlock Holmes is searching out a treasure. He must find the exact place where the far end of an elm shadow falls. But the tree no longer exists....

"I suppose it is impossible to find out how high the elm was?" I asked.
""I can give you it at once. It was sixty-four feet."
""How do you come to know it?" I asked in surprise.
" "When my old tutor used to give me an exercise in trigonometry, it always took the shape of measuring heights. When I was a lad I worked out every tree and building in the estate."
"This was an unexpected piece of luck. My data were coming more quickly than I could have reasonably hoped.
""Tell me," I asked, `did your butler ever ask you such a question?"
"Reginald Musgrave looked at me in astonishment. "Now that you call it to my mind," he answered, "Brunton did ask me about the height of the tree some months ago in connection with some little argument with the groom."
"This was excellent news, Watson, for it showed me that I was on the right road. I looked up at the sun. It was low in the heavens, and I calculated that in less than an hour it would lie just above the topmost branches of the old oak. One condition mentioned in the Ritual would then be fulfilled. And the shadow of the elm must mean the farther end of the shadow, otherwise the trunk would have been chosen as the guide. I had, then, to find where the far end of the shadow would fall when the sun was just clear of the oak."
"That must have been difficult, Holmes, when the elm was no longer there."
"Well, at least I knew that if Brunton could do it, I could also. Besides, there was no real difficulty. I went with Musgrave to his study and whittled myself this peg, to which I tied

Sherlock Holmes uses geometry to solve "The Musgrave Ritual"

 this long string with a knot at each yard. Then I took two lengths of a fishing-rod, which came to just six feet, and I went back with my client to where the elm had been. The sun was just grazing the top of the oak. I fastened the rod on end, marked out the direction of the shadow, and measured it. It was nine feet in length.
"Of course the calculation now was a simple one..."


Arthur Conan Doyle "The Musgrave Ritual"



