Answer on Question #72714, Physics / Mechanics | Relativity |

A high fountain of water is in the centre of a circular pool of water. You walk the circumference of the pool and measure it to be 1.50 × 10^2 meters. You then stand at the edge of the pool and use a protractor to gauge the angle of elevation of the top of the fountain. It is 55.0°. How high is the fountain?

Solution:

From the circumference we can find the radius of the pool $R=\frac{L}{2\pi}=\frac{150\,m}{2\pi}=23.9\,m.$

The height of the fontain is $H=R\,tg(55^0)=23.9\,m\cdot 1.428=34.1\,m.$

Answer: $H=34.1\,m.$