



The ball is being pulled by the two hands, forming a triangle that can be divided into two right triangles with sides labeled a1, b1, c1 and a2, b2, c2 respectively.

θ is given as 4.5°

$b1 = b2 = mg = 9.8\text{N} \times 15\text{N}$ (weight of ball given as $15\text{kg} = 15\text{N}$, gravitational pull is $9.8\text{m/s}^2 = 9.8\text{N}$)
 $= 147\text{N}$

The tension of the rope would equal the force created by the hands pulling (a1 and a2) and $a1 = a2$.

$$\begin{aligned}\sin\theta &= a1/b1 \\ \therefore a1 &= b1 \sin\theta \\ &= (147\text{N})\sin 4.5^\circ \\ &= 12\text{N}\end{aligned}$$