

10. The angle of each half of the rope, measured from the dashed line, is

$$\theta = \tan^{-1} \left( \frac{0.3 \text{ m}}{9 \text{ m}} \right) = 1.9^\circ .$$

Analyzing forces at the “kink” (where  $\vec{F}$  is exerted) we find

$$T = \frac{F}{2 \sin \theta} = \frac{550 \text{ N}}{2 \sin 1.9^\circ} = 8.3 \times 10^3 \text{ N} .$$