

2-9 When the object (the boy) is in circular motion, there has to be an inward acceleration, $a=v^2/r$. At the top of the motion, the acceleration will be zero (since the speed is zero), and so the tension $T = mg \cos \theta$, where θ is the angle relative to the vertical. At the lowest point in the motion, the tension $T - mg = ma = m v^2/r$, and thus $T = mg + mv^2/r$. Thus the tension is highest at the lowest point in the motion. (B) is the correct choice.