If Lancelot were at the end of the bridge, the tension in the cable would be (from taking torques about the hinge of the bridge) obtained from

\[ T = (600 \text{ kg})(9.80 \text{ m/s}^2)(12.0 \text{ m}) + (200 \text{ kg})(9.80 \text{ m/s}^2)(6.0 \text{ m}), \]

so \( T = 6860 \text{ N} \). This exceeds the maximum tension that the cable can have, so Lancelot is going into the drink. To find the distance \( x \) Lancelot can ride, replace the 12.0 m multiplying Lancelot’s weight by \( x \) and the tension \( T \) by \( T_{\text{max}} = 5.80 \times 10^3 \text{ N} \) and solve for \( x \);

\[
x = \frac{(5.80 \times 10^3 \text{ N})(12.0 \text{ m}) - (200 \text{ kg})(9.80 \text{ m/s}^2)(6.0 \text{ m})}{(600 \text{ kg})(9.80 \text{ m/s}^2)} = 9.84 \text{ m}.
\]