49. The speed of the boat is constant, given by \( v_b = d/t \). Here, \( d \) is the distance of the boat from the bridge when the key is dropped (12 m) and \( t \) is the time the key takes in falling. To calculate \( t \), we put the origin of the coordinate system at the point where the key is dropped and take the \( y \) axis to be positive in the \textit{downward} direction. Taking the time to be zero at the instant the key is dropped, we compute the time \( t \) when \( y = 45 \text{ m} \). Since the initial velocity of the key is zero, the coordinate of the key is given by \( y = \frac{1}{2}gt^2 \). Thus

\[
t = \sqrt{\frac{2y}{g}} = \sqrt{\frac{2(45 \text{ m})}{9.8 \text{ m/s}^2}} = 3.03 \text{ s}.
\]

Therefore, the speed of the boat is

\[
v_b = \frac{12 \text{ m}}{3.03 \text{ s}} = 4.0 \text{ m/s}.
\]