45. We use Eq. 16-29 and the parallel-axis theorem $I = I_{\rm cm} + mh^2$ where $h = d$, the unknown. For a meter stick of mass m, the rotational inertia about its center of mass is $I_{\rm cm} = mL^2/12$ where $L = 1.0$ m. Thus, for $T = 2.5$ s, we obtain

$$T = 2\pi\sqrt{\frac{mL^2/12 + md^2}{mgd}} = 2\pi\sqrt{\frac{L^2}{12gd} + \frac{d}{g}} \ .$$

Squaring both sides and solving for d leads to the quadratic formula:

$$d = \frac{g\,(T/2\pi)^2 \pm \sqrt{d^2\,(T/2\pi)^4 - L^2/3}}{2} \ .$$

Choosing the plus sign leads to an impossible value for d ($d = 1.5 > L$). If we choose the minus sign, we obtain a physically meaningful result: $d = 0.056$ m.