**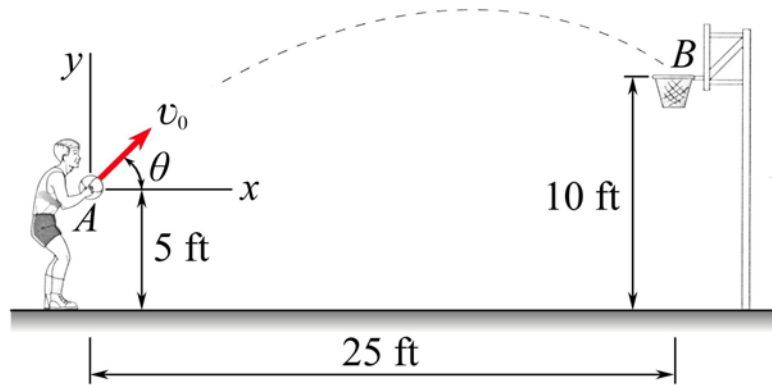1.** A basketball is thrown at $A$ and enters the basket at $B$ as shown, where $\theta = 60°$. Determine the initial speed $v_0$ of the ball at $A$. ⑧



**2.** How many hours/week *outside the class* should you reserve for the reading, homework, or getting help in this course? ①

**3.** You have been advised to learn your basics in mechanics from *two teachers*. Who are they? ①

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**1.** $\quad x = (v_0)_x\, t: \qquad 25 = v_0(\cos 60°)\, t_B \qquad t_B = \dfrac{25}{v_0 \cos 60°}$ ②

$$y = (v_0)_y\, t - \tfrac{1}{2}g\,t^2 : \qquad 10 - 5 = v_0\,(\sin 60°)\, t_B - \tfrac{1}{2}(32.2)t_B^2$$

$$5 = v_0 \sin 60° \cdot \dfrac{25}{v_0 \cos 60°} - 16.1\left(\dfrac{25}{v_0 \cos 60°}\right)^2 \qquad ④$$

$$5 = 25\sqrt{3} - \dfrac{40250}{v_0^2} \qquad\qquad v_0 = \pm 32.417$$

$$\boxed{v_0 = 32.4 \text{ ft/s}} \qquad ②$$