

**Answer on Question #46317, Physics, Mechanics | Kinematics | Dynamics**

**Question:**

A basketball player achieves a hang time of 0.67 s in dunking the ball. What vertical height will he attain? The acceleration of gravity is 9.8m/s<sup>2</sup> answer in units of m

**Answer:**

Time for motion downward equals:

$$t = \frac{0.67s}{2} = 0.335 \text{ s}$$

Equation of motion equals:

$$h - \frac{gt^2}{2} = 0$$

Therefore:

$$h = \frac{gt^2}{2} = \frac{9.8 \cdot 0.335^2}{2} m = 0.55 \text{ m}$$

Answer: 0.55 m