Chapter 3 Problem 68 [†]

Given
$a = 9.80\ m/s^2$
$\Delta x = 1.25\ m$

Solution
Find the initial vertical velocity of the baskeball player.

As the player jumps vertically, his acceleration will be that due to gravity once he leaves the floor. We can use the fourth kinematic equation to solve for the initial velocity. Of course, at the top of the jump, the vertical velocity (final velocity) will be zero.

$$v_f^2 - v_0^2 = 2a\Delta x$$

Solving for v_0 gives

$$v_0^2 = v_f^2 - 2a\Delta x$$

$$v_0 = \sqrt{v_f^2 - 2a\Delta x}$$

I am assuming the upward direction is positive. Therefore, the initial velocity will be positive and the acceleration due to gravity will be negative. Substituting these values into the equation gives

$$v_0 = \sqrt{(0\ m/s)^2 - 2(-9.80\ m/s^2)(1.25\ m)} = 4.95\ m/s$$

The vertical jump in thie problem is quite impressive. If you convert this distance into inches you get

$$\Delta x = 1.25\ m \left(\frac{100\ cm}{1\ m}\right)\left(\frac{1\ inch}{2.54\ cm}\right) = 49.2\ inches$$

LeBron James has a vertical jump of 44 inches. At a height of 6 foot 8 inches, that gives him plenty of room over the rim for a dunk.
The famous Michael Jordan had a vertical jump of 48 inches. He was only 6 foot 6 inches, but was famous for his dunking ability.
Outdoing both of these stars is Wilt Chamberlain who also had a 48 inch vertical jump, but with a height of 7 foot 1 inch. With a standing reach of 9 foot and 3 inches, he could potentially grab a quarter off the top of a basketball backboard.

[†]Problem from University Physics by Ling, Sanny and Moebs (OpenStax)