

### Flight of the Basketball

A basketball rolls off a table and lands on the floor. You will predict the horizontal distance the ball travels before it hits the floor. Show all calculations.

1. Horizontal velocity of the ball on the table:

*Do three time trials. Find average time.*

*Show data and calculations*

$t_1 =$  \_\_\_\_\_  $t_2 =$  \_\_\_\_\_  $t_3 =$  \_\_\_\_\_

$d =$  \_\_\_\_\_  $t_{ave} =$  \_\_\_\_\_  $v =$  \_\_\_\_\_ m/s

2. Height of the table surface from the floor (measure): \_\_\_\_\_ m

3. Time for the ball to hit the floor from the table (calculate):  
\_\_\_\_\_ sec

4. Horizontal distance the ball will travel while in flight (calculate):  
\_\_\_\_\_ m

5. Check. Actual distance the ball traveled while in flight: \_\_\_\_\_ m

6. Determine the percent difference between the actual distance and calculated distance:

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7. The time for the ball to hit the floor rolling off the table is the same as if ...  
(use words, not numbers)

8. While the ball is in the air, the forward velocity of the ball is ...  
(use words, not numbers)