

1. A (very old and broken) frisbee of mass $M=175$ grams and radius $R=12.5$ cm is nailed to the wall directly in its center. A model rocket motor is placed on the edge of the frisbee directed $\phi=10$ degrees off tangent. The motor is ignited and it produces a time-dependent force of $F(t) = bt$ for $t_f=3$ sec where $b= 42$ N/s.

- a. How fast is the frisbee spinning at 3 seconds?
- b. How many revolutions has the frisbee made at three seconds?

2. You throw a basketball of mass M and radius R . The ball starts at rest, but it leaves your hand spinning with an angular speed of ω_0 and a translational speed of v_0 at 30° above the horizontal. How much work did you do on the ball?