

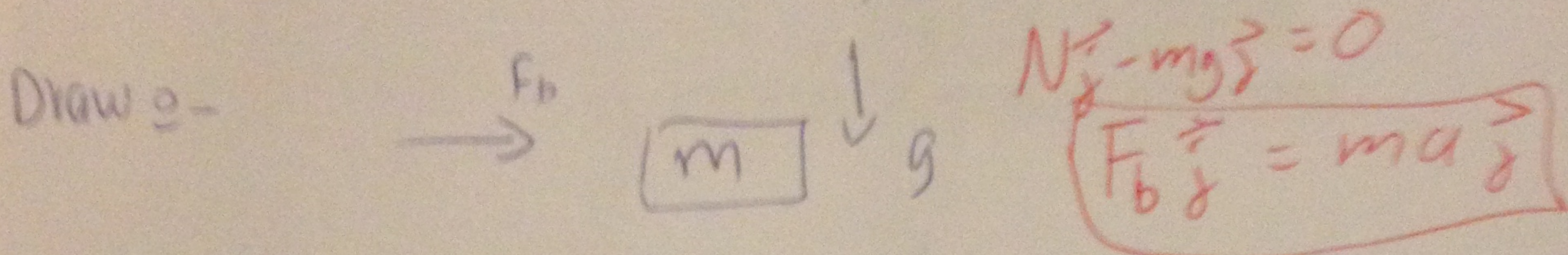
Dynamics Quiz: Use back or additional paper if you need more space.

Use and label seven steps: Goal, Given, Assumptions, Draw, Formulate Equations, Solution, Check.

Goal - The overall braking force acting on the car.

Given - 2700 lb, 53 mph, zero to 2 sec, 5280 ft in a mile

Assumptions - No air resistance, $g = 32.2$, know no cars near to us.



Formulate eqns - force eqn. show eq. $V_f = V_i + at$

Solution - 53 mph \Rightarrow ~~99.6 ft/s~~
~~77.7 ft/s²~~

$$53 \div 99.6 \div 2 = 49.8 \text{ ft/s}^2$$

$$\Rightarrow \frac{2700}{32.2} (49.8) =$$

$$\Rightarrow 83.85(49.8) = 4175.78 \text{ lb}$$

Check: ~~~~~