**Quiz #7**

**Part 1**

**A screenshot of a cell phone

Description automatically generated**

**Part 2**

T = I(alpha) F=m\*a

F\_friction \* R = (.5)mR^2 \* (a/R) gsin(theta)-gcos(theta)(mu)=a

F\_friction = (.5)m\*a gsin(theta)-gcos(theta)(a/(2cos(theta))=a

gcos(theta)(mu)=(.5)a gsin(theta) - (a/2) = a

(mu)=(a)/(2cos(theta)) gsin(theta) = (3/2)a

a = (2/3)\*g \* sin(theta)

a= (2/3)\*10\*sin(30)

**3.3 m/s^2**

**Part 3**

(torque)= I\*(alpha) alpha = a\_cm/ R (Inertia for solid sphere = 2/5mr^2)

Friction= (((2/5)mR^2)/R)(a\_cm/R)= (2/5)m(a\_cm)

Friction = 2/5(1kg)(3.3 m/s^2)

**1.32 kg\*m/s^2**