Name: ________________________
What would you buy if you won the lottery? ________________________

**Free Body Diagram Simulator!!**

Situation ___: A hockey puck glides to the right across the ice at a constant speed. Ignore air resistance.

![Diagram](image)

Situation ___: A football, originally kicked at a 40° angle to the horizontal, is at the peak of its trajectory. Ignore air resistance.

![Diagram](image)

Situation ___: A downward-moving skydiver who has just opened the parachute is slowing down. (Diagram the forces on the skydiver/parachute combination.)

![Diagram](image)

Situation ___: A rightward force is applied to a crate to push it across the floor at a constant speed. Ignore air resistance.

![Diagram](image)

Situation ___: A rightward-moving car is skidding to a stop across a level roadway with locked wheels. Ignore air resistance.

![Diagram](image)

Situation ___: A softball player does a head-first dive and is sliding to the right across the infield dirt. Ignore air resistance.

![Diagram](image)
Situation ___: A downward-moving skydiver is falling with a constant speed.

\[ F_{air} \]
\[ F_{grav} \]

Situation ___: A football is moving upward and rightward towards the peak of its trajectory. Ignore air resistance.

\[ F_{grav} \]

Situation ___: The cabin of a small freight elevator is secured to a motor by a cable and is moving upward while slowing down. There is no contact between the cabin and the elevator shaft. Ignore air resistance.

\[ F_{tens} \]
\[ F_{grav} \]

Situation ___: A rightward force is applied to a dresser to accelerate it to the right across the bedroom floor. Ignore air resistance.

\[ F_{fric} \]
\[ F_{norm} \]
\[ F_{app} \]

Situation ___: A sledder has reached the bottom of a hill and is coasting to the right while slowing down along the loosely-packed snow. Ignore air resistance.

\[ F_{fric} \]
\[ F_{norm} \]
\[ F_{grav} \]

Situation ___: The cabin of a small freight elevator is secured to a motor by a cable and is moving upward with a constant speed. There is no contact between the cabin and the elevator shaft. Ignore air resistance.

\[ F_{tens} \]
\[ F_{grav} \]