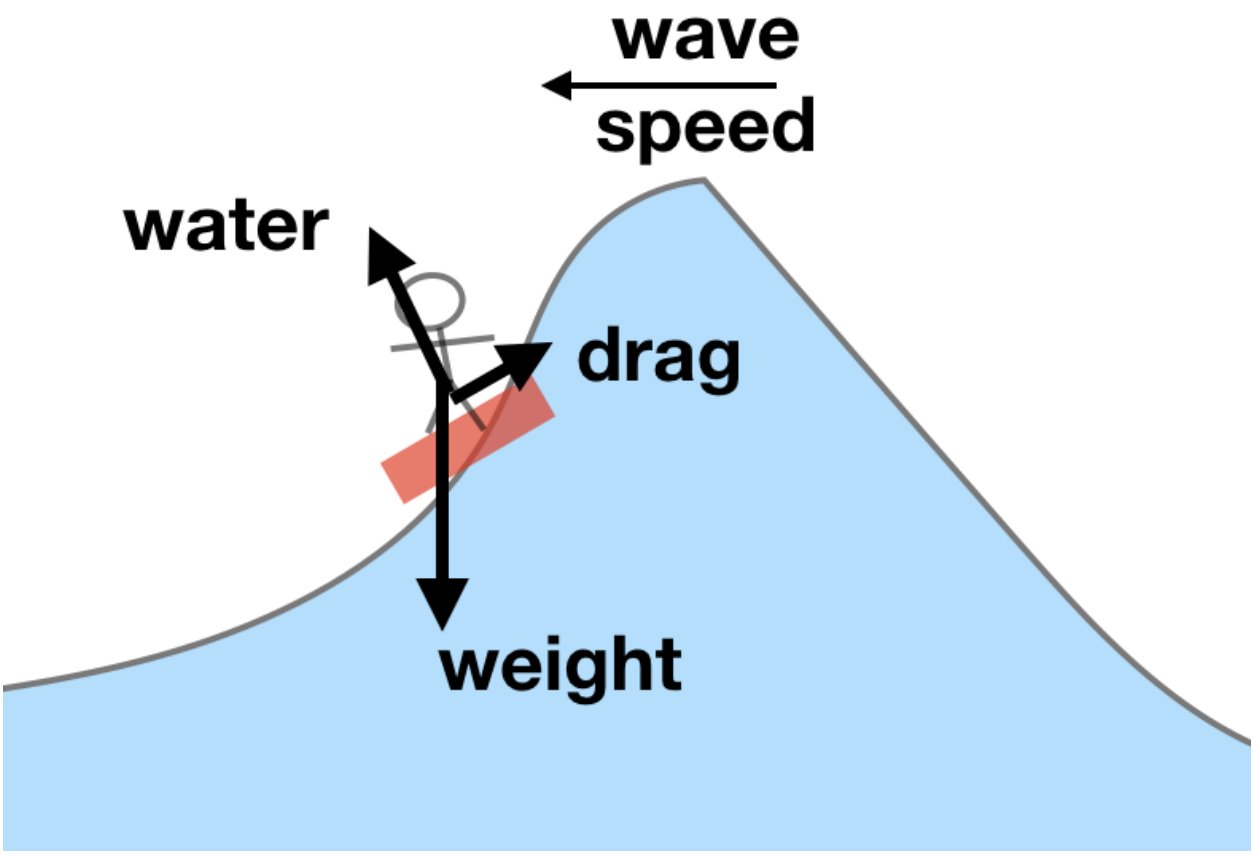
Surfer Physics – the system consist of the board and the surfer. Name: _____



Video Link: https://www.youtube.com/watch?v=S8U7ba6YRpE

System Mass (Surfer + Surf Board): 110 kg

Angle of Incline Surf Board: 30 Degrees

1. Draw the two components of the weight force (i.e. parallel and perpendicular) on the picture. Assume the system is in dynamic equilibrium.
2. Calculate the magnitude of the perpendicular weight force of the system.

3. Calculate the magnitude of the parallel weight force of the system.

4. Determine the numeric values of the drag and buoyant forces.

   Force Drag: _____ N Buoyant Force (aka water): _____

5. If the system maintains its current position on the wave, the speed of the surfer down the wave incline is _____ compared to the speed of the water underneath the board.