1. A Jedi Master and Sith Lord are locked in a fierce duel! At the same moment, both decide to use the force to move a heavy rock and slide it along the ground toward their opponent:

(a) Break each applied force into its horizontal and vertical components. Then, determine which direction those forces will be pointing (+x, -x, +y, -y). Lastly, determine the net horizontal and vertical force components on the rock, and calculate the net force (vector) on the rock.

(b) If the rock's mass is 100 kg, determine the magnitude of its net acceleration.

(c) Suppose whomever the rock is heading directly toward is standing 10 m from the rock. How long do they have to do a “Force jump” before the impending doom?