AP Physics

Mechanics Review Questions Name:_____

Block: _____ Date: _____

1. Al and Isaac are pulling horizontally on ropes attached to a post. The angle between the ropes is 45°. If Al exerts a force of 680 N and Isaac exerts a force of 500 N, find the magnitude of the resultant force and the angle it makes with respect to Al's pull. Of course, you should include a force diagram in your solution.

2. A student is pushing a crate up a 20° incline. The crate has a mass of 20 kg, and the coefficient of kinetic friction between the crate and the incline is 0.25.

   A. Draw a force diagram of the crate.

   B. Calculate the magnitude of the normal (supporting) force between the crate and the incline.

   C. Calculate the magnitude of the friction force between the crate and the floor.