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Work I

1. A catcher "gives" with a baseball when catching it. If the baseball exerts a force of 470 N on the glove, so that the glove is displaced 8.0 cm, how much work is done by the ball?
2. A person lifts a 5.2 kg cement block at a constant rate a vertical distance 1.5 m and then carries the block horizontally a distance 7.3 m. Determine the work done by
 - a. the person
 - b. the force of gravity (your answer here should be negative)

3. A flight attendant pulls her 70.0 N flight bag a distance of 253 m along a level airport floor at a *constant speed*. The force she exerts is 37.0 N at an angle of 52.0° above the horizontal.
- Find the work she does on the flight bag.
 - Find the work done by the force of friction on the flight bag.
 - Find the coefficient of kinetic friction between the flight bag and the floor. (remember that $\mu_k = F_k / F_N$)
4. A plane designed for vertical takeoff has a mass of 8.0×10^3 kg. Find the net work done by all forces on the plane as it *accelerates* upward at 1.0 m/s^2 through a distance of 28.0 m after starting from rest. (remember that $F_{\text{net}} = ma$)