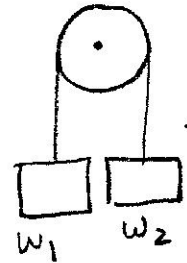


PRACTICE PROBLEMS FOR FORCE/FRICTION

1. Convert 211 kg mass to newtons.

2. How many kilograms is a 4500N weight?

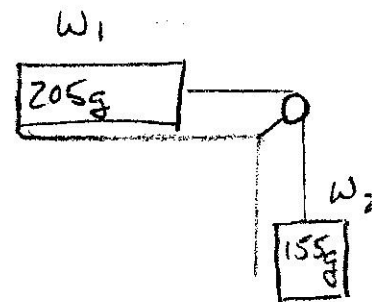
3. What is the direction and acceleration of this Atwood system? →



$$W_1 = 25 \text{ kg}$$
$$W_2 = 10 \text{ kg}$$

4. What force is needed to accelerate a 12-kg cannonball 2 m/s/s?

5. Find the acceleration of this system with no friction. →



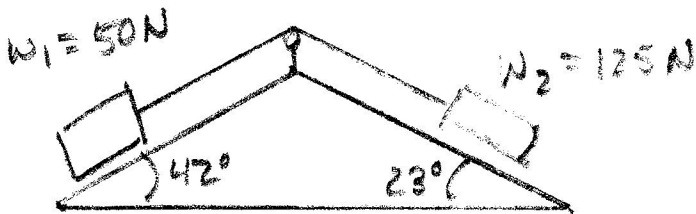
6. If the above situation has a coefficient of friction of 0.4 between the horizontal surface and the box, what is the new acceleration?

7. A 72-kg cross country skier travels at a constant velocity with a force of 100N. What is the coefficient of friction between the skies and the snow?

8. A skateboarder uses 220N of force to accelerate his 440N body and his 20N skateboard 2.6 m/s/s. What is the frictional force?

9. A helicopter has a weight of 4100N and accelerates upward at 2.5 m/s/s. What force is exerted by the air to lift the helicopter up?

10. What is the direction and acceleration of the system below?



Answers: 1. 2068N 2. 459-kg 3. 4.2 m/s/s, ccw 4. 24N 5. 4.22 m/s/s
 6. 2.0 m/s/s 7. 0.14 8. 98N 9. 10. right, 0.86 m/s/s

$$5.14 \times 10^3 \text{ N}$$