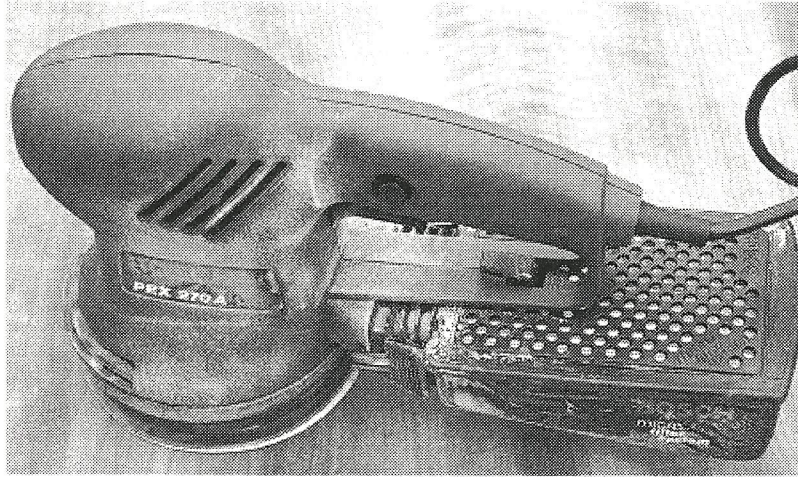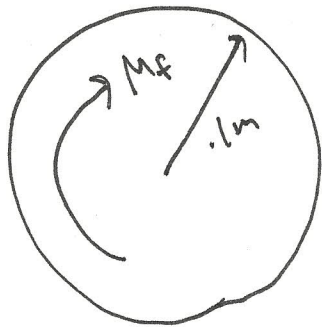## Question 1:

A disc sander is pressed against a wooden surface with a force of 50N.
Assuming the kinetic coefficient between the sanding pad and the wood
is .6 and the diameter of the sanding disc is .2 meters, what is the torque
the motor must exert to keep the disc spinning at a constant rate?

$$M_f = \frac{2}{3} M_n F_{load} r_o$$

$$M_f = \frac{2}{3}(.6)(50N)(.1m)$$

$$M_f = 2 \, Nm$$

$$T_{motor} = M_f = 2 \, Nm$$