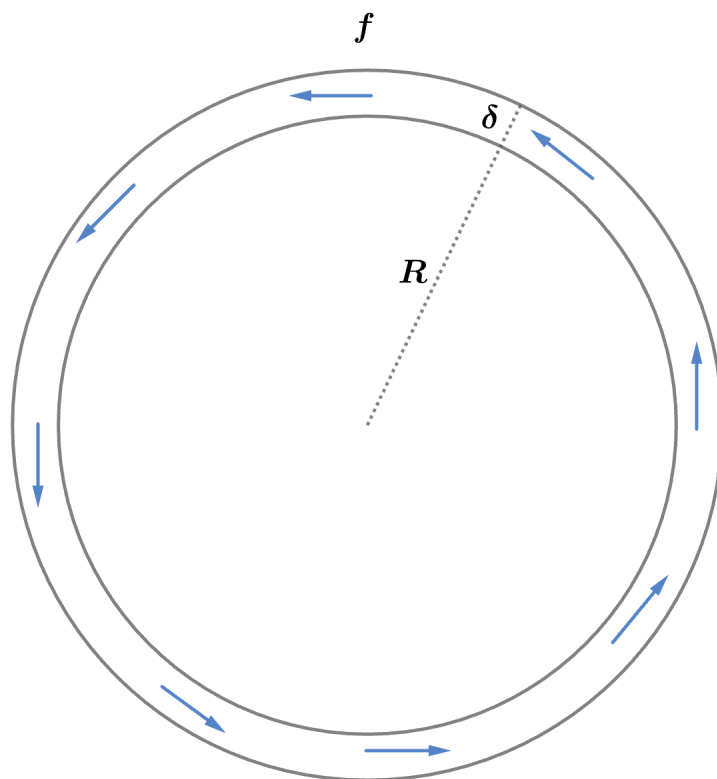


2011 F=ma Exam: Problem 24

Kevin S. Huang



The power supplied is given by

$$P = \tau\omega$$

where τ is the torque supplied to the ring and ω is the rotation rate. The torque supplied to the ring has to balance the torque from friction so

$$\tau = fR = \mu NR$$

$$P = \mu NR\omega$$

Increasing R increases the power required while increasing δ has no effect at our level of approximation so the answer is A.