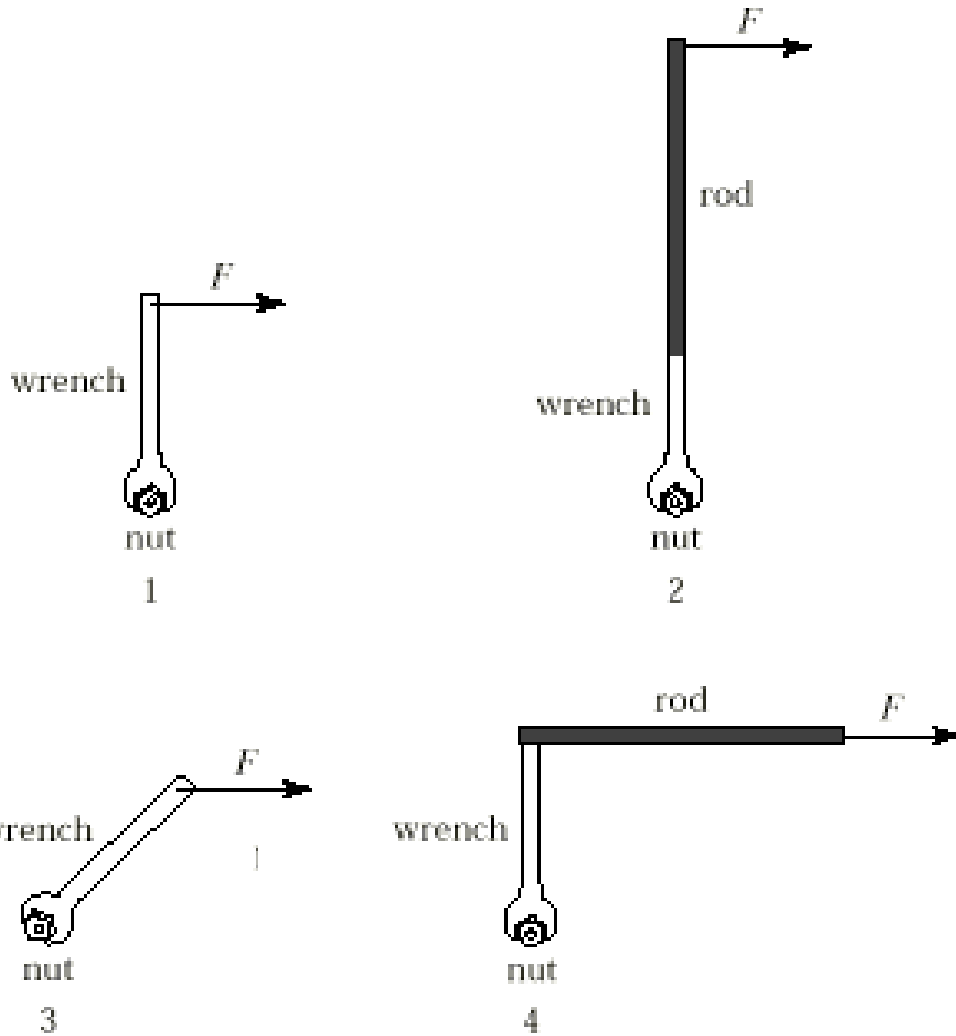


11-8

You are using a wrench and trying to loosen a rusty nut. Which of the arrangements shown is most effective in loosening the nut? (A=1, B=2, C=3, D=4)



Least effective in loosening the nut?

Q10.6



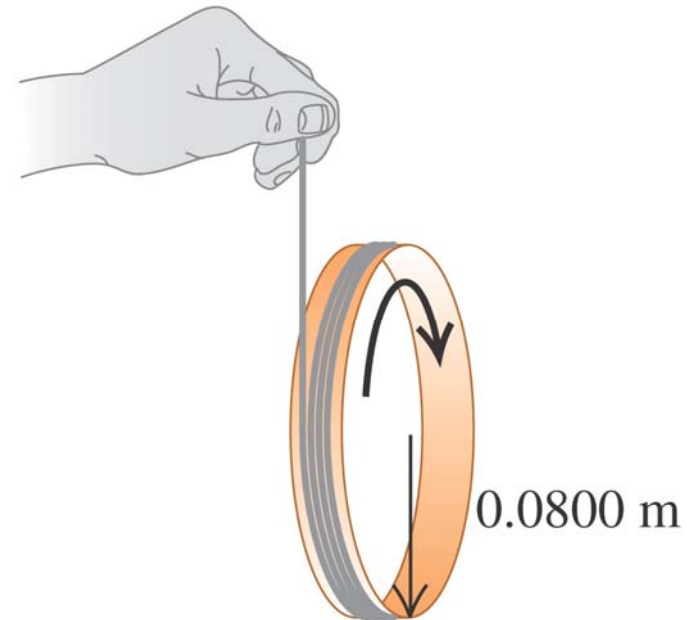
A lightweight string is wrapped several times around the rim of a small hoop. If the free end of the string is held in place and the hoop is released from rest, the string unwinds and the hoop descends. How does the tension in the string (T) compare to the weight of the hoop (w)?

A. $T = w$

B. $T > w$

C. $T < w$

D. not enough information given to decide

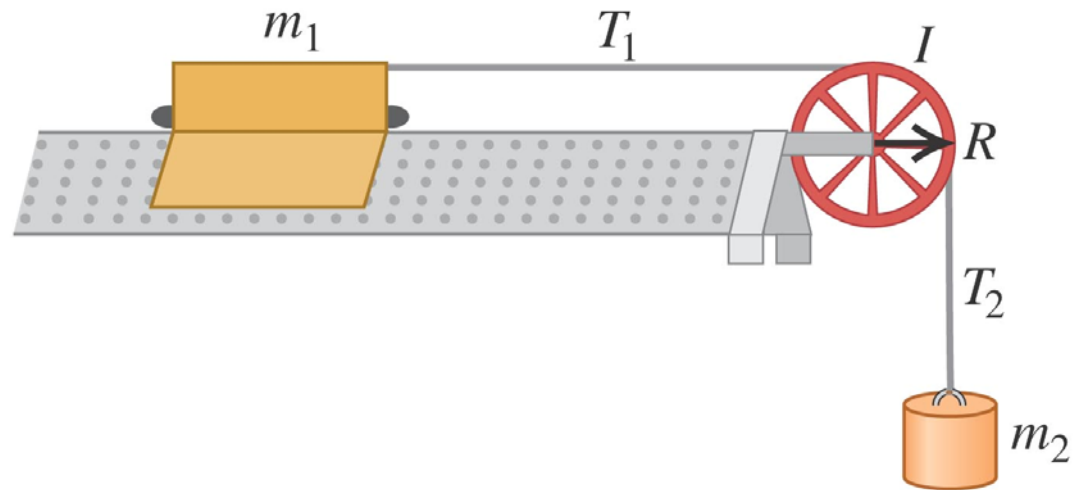


Q10.5



A glider of mass m_1 on a frictionless horizontal track is connected to an object of mass m_2 by a massless string. The glider accelerates to the right, the object accelerates downward, and the string rotates the pulley. What is the relationship among T_1 (the tension in the horizontal part of the string), T_2 (the tension in the vertical part of the string), and the weight m_2g of the object?

- A. $m_2g = T_2 = T_1$
- B. $m_2g > T_2 = T_1$
- C. $m_2g > T_2 > T_1$
- D. $m_2g = T_2 > T_1$
- E. none of the above

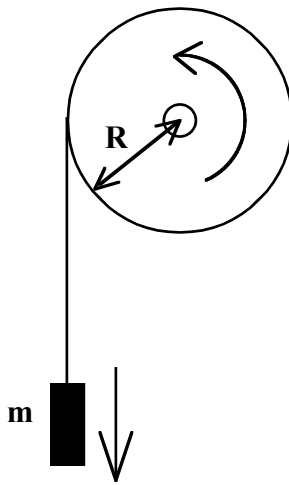


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11-11

A mass m hangs from string wrapped around a pulley of radius R . The pulley has a moment of inertia I and its pivot is frictionless.

Because of gravity the mass falls and the pulley rotates. The magnitude of the torque on the pulley is..



A: greater than mgR

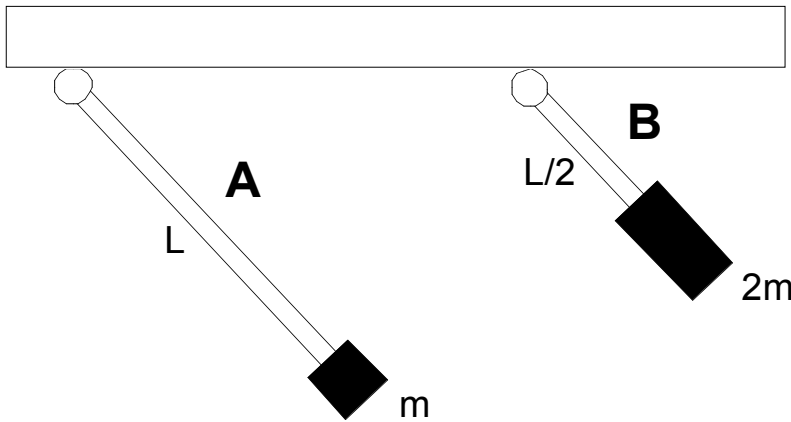
B: less than mgR

C: equal to mgR

(Hint: Is the tension in the string = mg ?)

11-17

Two light (massless) rods, labeled A and B, each are connected to the ceiling by a frictionless pivot. Rod A has length L and has mass m at the end of the rod. Rod B has length $L/2$ and has a mass $2m$ at its end. Both rods are released from rest in a horizontal position.



Which one experiences the larger torque?

A: A B: B C: Both have the same size τ .

Which one falls to the vertical position fastest?

A: A B: B C: Both fall at the same rate.

(Hint: $\alpha = \frac{\tau}{I}$)