

Chapter 8 Homework Assignment Answers

Name _____ #: _____

Practice 8A, pg. 282, # 1 & 3, and Section Review, pg. 282, # 1, 2, & 4 and Practice 8B, pg. 288, # 2 & 3 and Section Review, pg. 289, # 1, 2, 3, 4, & 5

Practice 8A

- 1) $0.65 \text{ N} \cdot \text{m}$ 3-a) $5.1 \text{ N} \cdot \text{m}$ 3-b) $15 \text{ N} \cdot \text{m}$

Section Review, pg. 282

- 1-a) point mass 1-b) extended object 1-c) extended object 1-d) point mass
2) Torque—units are $\text{N} \cdot \text{m}$ and Torque is a measure of the ability of a force to rotate an object and it depends on the force, lever arm, and angle
4) Twice as much force would be needed

Practice 8B

- 2-a) 0.86 m from the 400.0 N child 2-b) 0.46 m from pivot point on 300.0 N side
3) $2.1 \times 10^5 \text{ N}$ and $2.1 \times 10^5 \text{ N}$ (**Remember the answers are in correct Sig Fig's**)

Section Review, pg. 289

- 1-a) G 1-b) A—E 1-c) F
2-a) 50.0 cm 2-b) near center 2-c) center of cube 2-d) donut center 2-e) middle
3) Mass is inertia that resists changed in translational motion, while moment of inertia is inertia that resists changes in rotational motion.
4-a) rotational & translational 4-b) rotational & translational 4-c) neither 4-d) rotational
5-a) 2.2 m from the center 5-b) $9.0 \times 10^2 \text{ N}$

Practice 8C, pg. 291, # 1 & 3 and Practice 8D, pg. 294, # 1 & 4 and Practice 8E, pg 297, # 2 & 3, and Section Review, pg. 297, # 1 & 3, and Section Review, pg. 301, # 2, 3, & 5

Practice 8C

- 1-a) 0.87 rad/s^2 1-b) $11 \text{ N} \cdot \text{m}$ 3) $7.8 \text{ N} \cdot \text{m}$

Practice 8D

- 1) 3.5 rad/s 4) 6.73 rad/s

Practice 8E

- 2) 1.6 s 3) 280 J

Section Review, pg. 297

- 1) 1.9 rad/s $24 \text{ kg} \cdot \text{m}^2$

Section Review, pg. 301

- 2) 130 N 3) 2.7
5) lever—pedal arm wheel & axle—wheels pulley—gear **system**