

Answers to Homework 6.

1) 0.676 s (the inner radius is 4 in)

2) 1.46 s

3) a) -22.2 rad/s b) -53.6 rad/s (the disk radius is 300 mm)

4) 82.45 ft lb

5) 0.0875 rad/s² (planet gear) (the radius of the sun gear is 20 in), tangential force = 10 lb

6) a) $P = -101.9 \text{ N}$, $V = 0$, $M_{\text{bend}} = 44.15 \text{ N m}$

b) $P = 76.46 \text{ N}$, $V = 5.518 \text{ N}$, $M_{\text{bend}} = 60.70 \text{ N m}$