

Homework (Giancoli, 3rd ed., pp. 199-200)

8-20. Two rubber wheels are mounted next to one another so that their circular edges touch. Wheel 1, of radius $R_1 = 3.0$ cm, accelerates at a rate 0.88 rad/s² and drives the second wheel, of radius $R_2 = 5.0$ cm, by contact (without slipping). (a) Starting from rest, how long does it take the second wheel to reach an angular speed of 33 rpm? (b) What was the angular acceleration of wheel 2?

8-21. The tires of a car make 70 revolutions as the car reduces its speed uniformly from 90 km/h to 50 km/h. The tires have a diameter of 1.0 m. (a) What was the angular acceleration? (b) If the car continues to decelerate at this rate, how much more time is required for it to stop?
(Ans. a. -2.0 rad/s², b. 14 s)