1) A fan is turned off, and its angular speed decreases from 10.0 rad/s to 6.3 rad/s in 5.0 s. What is the magnitude of the angular acceleration of the fan?
   A) 0.74 rad/s^2  
   B) 0.37 rad/s^2  
   C) 11.6 rad/s^2  
   D) 1.16 rad/s^2  
   Answer: A

2) A wheel that is rotating at 33.3 rad/s is given an angular acceleration of 2.15 rad/s^2. Through what angle has the wheel turned when its angular speed reaches 72.0 rad/s?
   A) 83.2 rad  
   B) 697 rad  
   C) 66.8 rad  
   D) 948 rad  
   Answer: D

3) A wheel rotates through an angle of 320° as it slows down from 78.0 rpm to 22.8 rpm. What is the magnitude of the average angular acceleration of the wheel?
   A) 5.46 rad/s^2  
   B) 6.50 rad/s^2  
   C) 8.35 rad/s^2  
   D) 10.9 rad/s^2  
   Answer: A

4) Two children are riding on a merry-go-round. Child A is at a greater distance from the axis of rotation than child B. Which child has the larger angular speed?
   A) Child A  
   B) Child B  
   C) They have the same angular speed.  
   D) There is not enough information given to answer the question.  
   Answer: C

5) Earth circles the sun at a distance of 1.50 × 10^{11} m. What is the tangential speed of Earth in its orbit?
   A) 29900 m/s  
   B) 14900 m/s  
   C) 59800 m/s  
   D) 7470 m/s  
   Answer: A

6) A child is riding a merry-go-round which completes one revolution every 8.36 s. The child is standing 4.65 m from the center of the merry-go-round. What is the magnitude of the centripetal acceleration of the child?
   A) 6.84 m/s^2  
   B) 2.63 m/s^2  
   C) 0.0664 m/s^2  
   D) 0.696 m/s^2  
   Answer: B

7) Earth's radius is 6.38 × 10^6 m, and it completes one revolution every day. What is the magnitude of the centripetal acceleration of a person standing on the equator?
   A) 0.00844 m/s^2  
   B) 0.00343 m/s^2  
   C) 0.0337 m/s^2  
   D) 0.00854 m/s^2
Answer: C

8) A Ferris wheel with a radius of 8.0 m rotates at a constant rate, completing one revolution in 30.0 s. What is the apparent weight of a 60.0-kg passenger when she is at the top of the wheel?
   A) 589 N
   B) 568 N
   C) 615 N
   D) 325 N
   Answer: B

9) A Ferris wheel with a radius of 16.0 m rotates at a constant rate, completing one revolution in 30.0 s. What is the apparent weight of a 60.0-kg passenger when she is at the bottom of the wheel?
   A) 589 N
   B) 562 N
   C) 631 N
   D) 852 N
   Answer: C

10) A child is riding a merry-go-round, which has an instantaneous angular speed of 1.25 rad/s and an angular acceleration of 0.745 rad/s². The child is standing 4.65 m from the center of the merry-go-round. What is the magnitude of the acceleration of the child?
    A) 8.05 m/s²
    B) 7.27 m/s²
    C) 2.58 m/s²
    D) 3.46 m/s²
    Answer: A

11) A scooter has wheels with a diameter of 120 mm. What is the angular speed of the wheels when the scooter is moving forward at 6.00 m/s?
    A) 47.7 rpm
    B) 955 rpm
    C) 50.0 rpm
    D) 100 rpm
    Answer: B

12) A soccer ball whose radius is 11 cm rolls a distance of 10 m in 3.50 s. What is the angular speed of the ball?
    A) 13 m/s
    B) 26 m/s
    C) 39 m/s
    D) 52 m/s
    Answer: B