Welcome back, Bill Wiecking

>>Working in AP Physics B (SC651)

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ch 10 exam

Chapter 10: Rotational Kinematics

Section 1: Angular position

10.1.1
(5.00) Two cars are traveling around a circular track. The angle between them, from the center of the circle, is 55° and the track has a radius of r m. How far apart are the two cars, as measured around the curve of the track?

[　　　　] m

Section 3: Angular velocity

10.3.2
(5.00) An LP record rotates at 33 1/3 rpm (revolutions per minute) and is 12.0 inches in diameter. What is the angular velocity in rad/s for a fly sitting on the outer edge of an LP rotating in a clockwise direction?

[　　　　] rad/s

Section 4: Angular acceleration

10.4.2
(5.00) The blades of a kitchen blender rotate counterclockwise at $2.2×10^4$ rpm (revolutions per minute) at top speed. It takes the blender 2.1 seconds to reach this top speed after being turned on. What is the average angular acceleration of the blades?

[　　　　] rad/s^2

Section 7: Equations for rotational motion with constant acceleration

10.7.2
(5.00) A CD is rotating counterclockwise at 31 rad/s. What angular acceleration will bring it to a stop in 28 rad?

[　　　　] rad/s^2

10.7.9
(7.00) The platter of a modern hard disk drive spins at $7.20×10^3$ rpm (revolutions per minute). (a) How much time, in seconds, does it take for the disk to make a complete revolution? (b) Starting from rest, suppose the disk reaches full

speed in 5.00 seconds. What is the average angular acceleration of the disk in radians per second? (c) Assuming constant angular acceleration, how many revolutions has the hard disk turned while spinning up to its final angular velocity?

(a) [＿＿＿] s

(b) [＿＿＿] rad/s^2

(c) [＿＿＿] rev

Section 11: Tangential velocity

10.11.3 A computer hard drive disk with a diameter of 3.5 inches rotates at 7200 rpm.
(7.00) The "read head" is positioned exactly halfway from the axis of rotation to the outer edge of the disk. What is the tangential speed in m/s of a point on the disk under the read head?

[＿＿＿] m/s

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