1) How long does it take for a rotating object to speed up from 15.0 to 33.3 rad/s if it has an angular acceleration of 3.45 rad/s\(^2\)?
A) 4.35 s
B) 5.30 s
C) 9.57 s
D) 63.1 s
Answer: B

2) 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

3) Earth circles the sun at a distance of \(1.50 \times 10^{11}\) m. What is the magnitude of the centripetal acceleration of Earth in its orbit?
A) 0.00595 m/s\(^2\)
B) 0.00148 m/s\(^2\)
C) 0.0238 m/s\(^2\)
D) 0.000372 m/s\(^2\)
Answer: A

4) A compact disk rotates at 210 revolutions per minute. What is its angular speed in rad/s?
A) 11.0 rad/s
B) 22.0 rad/s
C) 69.1 rad/s
D) 660 rad/s
Answer: B

5) How long does it take for a rotating object to speed up from 15.0 to 33.3 rad/s if it has an angular acceleration of 3.45 rad/s\(^2\)?
A) 4.35 s
B) 5.30 s
C) 9.57 s
D) 63.1 s
Answer: B

6) A bullet is fired with a certain velocity at an angle \(\theta\) above the horizontal at a location where \(g = 10.0\) m/s\(^2\). The initial \(x\) and \(y\) components of its velocity are 86.6 m/s and 50.0 m/s respectively. How long does it take before the bullet hits the ground?
A) 10.0 seconds
B) 5.0 seconds
C) 15.0 seconds
D) None of the other choices is correct.
Answer: A

7) A ball is thrown horizontally with an initial velocity of 20.0 m/s from the edge of a building of a certain height. The ball lands at a horizontal distance of 82.0 m from the base of the building. What is the height of the building?
A) 40.5 m
B) 60.2 m
C) 87.9 m
D) 82.4 m
Answer: D