

AP Physics C: Mechanics Practice Test 2

PHYSICS C

Physics C has two exams: Physics C (Mechanics) and Physics C (Electricity and Magnetism):

	<u>Physics C (Mechanics)</u>	<u>Physics C (Electricity and Magnetism)</u>
First 45 min.	Sec. I, Multiple Choice 35 questions	Sec. I, Multiple Choice 35 questions
Second 45 min.	Sec. II, Free Response 3 questions	Sec. II, Free Response 3 questions

You may take just Mechanics or just Electricity and Magnetism, or both. If you take both, you will receive a separate grade for each. Each section of each examination is 50 percent of the total grade; each question in a section has equal weight. Calculators are permitted on both sections of the exam. However, calculators cannot be shared with other students and calculators with typewriter-style (QWERTY) keyboards will not be permitted. On the following pages you will find the Table of Information that is provided to you during the exam.

If you are taking

- *Mechanics only*, please be careful to answer numbers 1–35;
- *Electricity and Magnetism only*, please be careful to answer numbers 36–70;
- *the entire examination* (Mechanics and Electricity and Magnetism), answer numbers 1–70 on your answer sheet.

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ADVANCED PLACEMENT PHYSICS C TABLE OF INFORMATION

CONSTANTS AND CONVERSION FACTORS			
Proton mass,	$m_p = 1.67 \times 10^{-27} \text{ kg}$	Electron charge magnitude,	$e = 1.60 \times 10^{-19} \text{ C}$
Neutron mass,	$m_n = 1.67 \times 10^{-27} \text{ kg}$	1 electron volt,	$1 \text{ eV} = 1.60 \times 10^{-19} \text{ J}$
Electron mass,	$m_e = 9.11 \times 10^{-31} \text{ kg}$	Speed of light,	$c = 3.00 \times 10^8 \text{ m/s}$
Avogadro's number,	$N_A = 6.02 \times 10^{23} \text{ mol}^{-1}$	Universal gravitational constant,	$G = 6.67 \times 10^{-11} (\text{N}\cdot\text{m}^2)/\text{kg}^2$
Universal gas constant,	$R = 8.31 \text{ J/(mol K)}$	Acceleration due to gravity	$g = 9.8 \text{ m/s}^2$
Boltzmann's constant,	$k_B = 1.38 \times 10^{-23} \text{ J/K}$	at Earth's surface,	
1 unified atomic mass unit,		$1 \text{ u} = 1.66 \times 10^{-27} \text{ kg} = 931 \text{ MeV}/c^2$	
Planck's constant,		$h = 6.63 \times 10^{-34} \text{ J}\cdot\text{s} = 4.14 \times 10^{-15} \text{ eV}\cdot\text{s}$	
Vacuum permittivity,		$hc = 1.99 \times 10^{-25} \text{ J}\cdot\text{m} = 1.24 \times 10^3 \text{ eV}\cdot\text{nm}$	
Coulomb's law constant,		$\epsilon_0 = 8.85 \times 10^{-12} \text{ C}^2/(\text{N}\cdot\text{m}^2)$	
Vacuum permeability,		$k = 1/(4\pi\epsilon_0) = 9.0 \times 10^9 (\text{N}\cdot\text{m}^2)/\text{C}^2$	
Magnetic constant,		$\mu_0 = 4\pi \times 10^{-7} (\text{T}\cdot\text{m})/\text{A}$	
1 atmosphere pressure,		$k' = \mu_0/(4\pi) = 1 \times 10^{-7} (\text{T}\cdot\text{m})/\text{A}$	
		$1 \text{ atm} = 1.0 \times 10^5 \text{ N/m}^2 = 1.0 \times 10^5 \text{ Pa}$	

UNIT SYMBOLS	meter,	m	mole,	mol	watt,	W	farad,	F
	kilogram,	kg	hertz,	Hz	coulomb,	C	tesla,	T
	second,	s	newton,	N	volt,	V	degree Celsius,	°C
	ampere,	A	pascal,	Pa	ohm,	Ω	electron volt,	eV
	kelvin,	K	joule,	J	henry,	H		

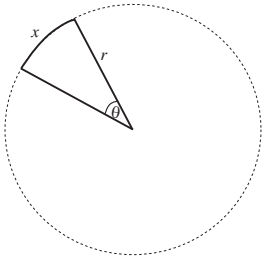
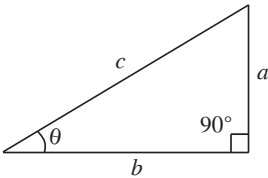
VALUES OF TRIGONOMETRIC FUNCTIONS FOR COMMON ANGLES							
θ	0°	30°	37°	45°	53°	60°	90°
$\sin\theta$	0	1/2	3/5	$\sqrt{2}/2$	4/5	$\sqrt{3}/2$	1
$\cos\theta$	1	$\sqrt{3}/2$	4/5	$\sqrt{2}/2$	3/5	1/2	0
$\tan\theta$	0	$\sqrt{3}/3$	3/4	1	4/3	$\sqrt{3}$	∞

PREFIXES		
Factor	Prefix	Symbol
10^9	giga	G
10^6	mega	M
10^3	kilo	k
10^{-2}	centi	c
10^{-3}	milli	m
10^{-6}	micro	μ
10^{-9}	nano	n
10^{-12}	pico	p

The following assumptions are used in this exam.

- I. The frame of reference of any problem is inertial unless otherwise stated.
- II. The direction of current is the direction in which positive charges would drift.
- III. The electric potential is zero at an infinite distance from an isolated point charge.
- IV. All batteries and meters are ideal unless otherwise stated.
- V. Edge effects for the electric field of a parallel plate capacitor are negligible unless otherwise stated.

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GEOMETRY AND TRIGONOMETRY		CALCULUS
Rectangle $A = bh$	A = area C = circumference V = volume S = surface area	$\frac{df}{dx} = \frac{df}{du} \frac{du}{dx}$
Triangle $A = \frac{1}{2}bh$	b = base h = height ℓ = length w = width r = radius s = arc length θ = angle	$\frac{d}{dx}(x^n) = nx^{n-1}$
Circle $A = \pi r^2$ $C = 2\pi r$ $s = r\theta$		$\frac{d}{dx}(e^{ax}) = ae^{ax}$
Rectangular Solid $V = \ell wh$		$\frac{d}{dx}(\ln ax) = \frac{1}{x}$
Cylinder $V = \pi r^2 \ell$ $S = 2\pi r \ell + 2\pi r^2$		$\frac{d}{dx}[\sin(ax)] = a \cos(ax)$
Sphere $V = \frac{4}{3}\pi r^3$ $S = 4\pi r^2$		$\frac{d}{dx}[\cos(ax)] = -a \sin(ax)$
Right Triangle $a^2 + b^2 = c^2$ $\sin \theta = \frac{a}{c}$ $\cos \theta = \frac{b}{c}$ $\tan \theta = \frac{a}{b}$		$\int x^n dx = \frac{1}{n+1} x^{n+1}, n \neq -1$
		$\int e^{ax} dx = \frac{1}{a} e^{ax}$
		$\int \frac{dx}{x+a} = \ln x+a $
		$\int \cos(ax) dx = \frac{1}{a} \sin(ax)$
		$\int \sin(ax) dx = -\frac{1}{a} \cos(ax)$
		VECTOR PRODUCTS
		$\vec{A} \cdot \vec{B} = AB \cos \theta$
		$ \vec{A} \times \vec{B} = AB \sin \theta$

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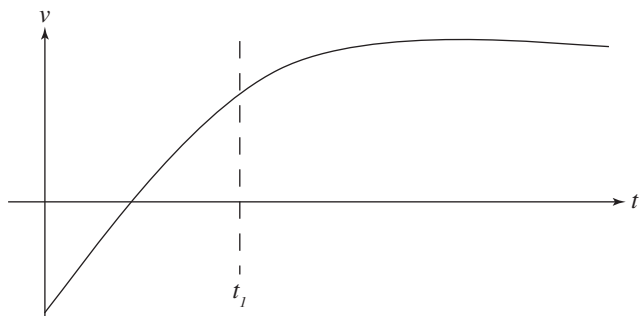
PHYSICS C: MECHANICS

SECTION I

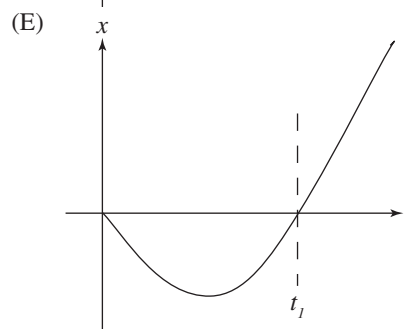
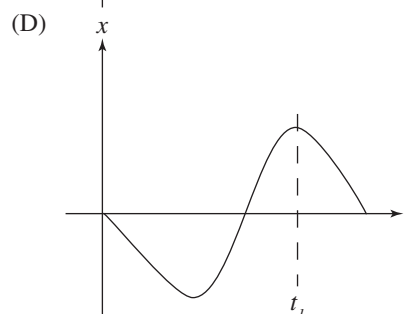
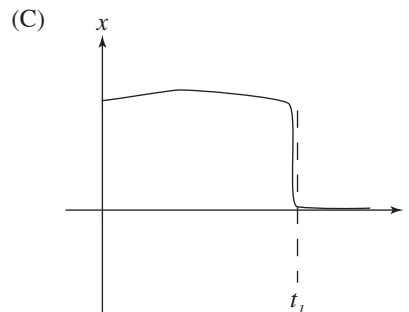
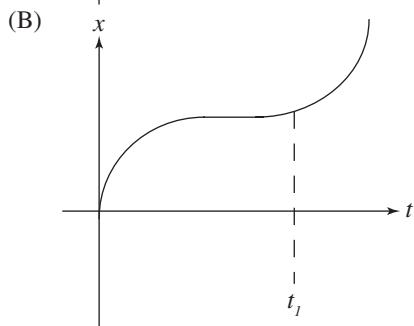
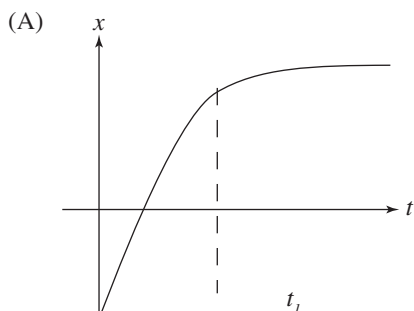
Time—45 minutes

35 Questions

Directions: Each of the following questions or incomplete statements below is followed by five suggested answers or completions. Select the one that is best in each case and then mark it on your answer sheet.

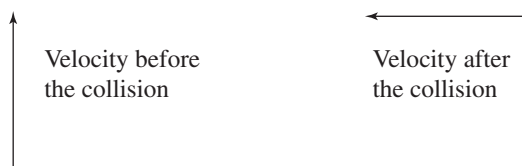


1. The graph above shows the velocity-vs.-time graph for a 3 kg object moving in one dimension. Which of the following is a possible graph of position-versus-time for this object?



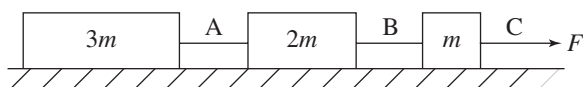
2. A ball is dropped from an 80 m tall building. How long does the ball take to reach the ground?
- (A) 2.8 seconds
 (B) 4 seconds
 (C) 8 seconds
 (D) 8.9 seconds
 (E) 16 seconds

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3. The velocity of an object before a collision is directed straight north and the velocity after the collision is directed straight west, as shown above. Which of the following vectors represents the change in momentum of the object?

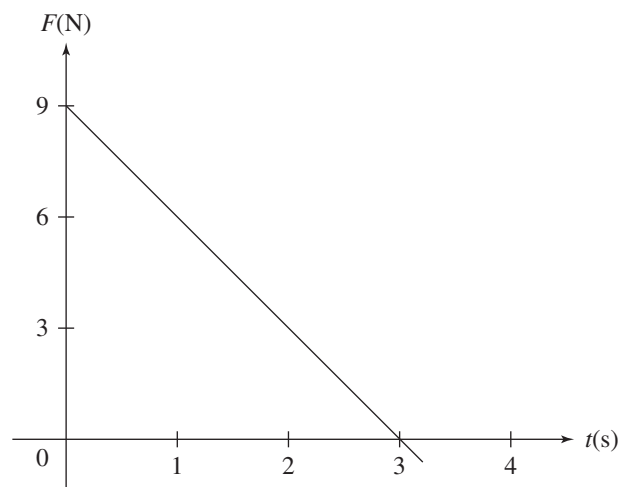
- (A)
- (B)
- (C)
- (D)
- (E)



4. Three blocks of masses $3m$, $2m$, and m are connected to strings A, B, and C as shown above. The blocks are pulled along a frictionless, horizontal floor with a force, F . Determine the acceleration of the $2m$ block.

- (A) $\frac{F}{2m}$
- (B) $\frac{F}{6m}$
- (C) $2Fm$
- (D) $6Fm$
- (E) $\frac{F}{m}$

Questions 5-6



A block of mass 2 kg, initially at rest, is pulled along a frictionless, horizontal surface with a force shown as a function of time by the graph above.

5. The acceleration of the block at $t = 2$ s is

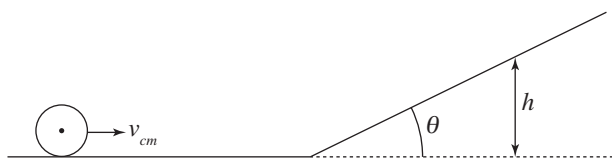
- (A) 0 m/s^2
- (B) 1.5 m/s^2
- (C) 2.0 m/s^2
- (D) 2.5 m/s^2
- (E) 3.0 m/s^2

6. The speed of the block at $t = 3$ s is

- (A) 0 m/s
- (B) 4.5 m/s
- (C) 6.75 m/s
- (D) 13.5 m/s
- (E) 54 m/s

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Questions 7–8



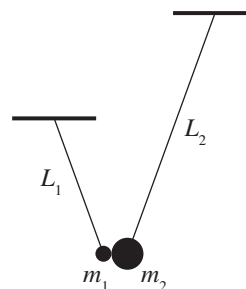
The center of mass of a cylinder of mass m , radius r , and rotational inertia $I = \frac{1}{2}mr^2$ has a velocity of v_{cm} as it rolls without slipping along a horizontal surface. It then encounters a ramp of angle θ , and continues to roll up the ramp without slipping.

7. What is the maximum height the cylinder reaches?

- (A) $\frac{v^2}{4g}$
- (B) $\frac{4v^2}{3g}$
- (C) $\frac{v^2}{3g}$
- (D) $\frac{3v^2}{4g}$
- (E) $\frac{4g}{3v^2}$

8. Now the cylinder is replaced with a hoop that has the same mass and radius. The hoop's rotational inertia is mr^2 . The center of mass of the hoop has the same velocity as the cylinder when it is rolling along the horizontal surface and the hoop also rolls up the ramp without slipping. How would the maximum height of the hoop compare to the maximum height of the cylinder?

- (A) The hoop would reach a greater maximum height than the cylinder.
- (B) The hoop and cylinder would reach the same maximum height.
- (C) The cylinder would reach a greater maximum height than the hoop.
- (D) The cylinder would reach less than half the height of the hoop.
- (E) None of the above



9. As shown above, two pendulums start with their masses touching before they are released. The first pendulum has a string of length $L_1 = 0.9$ m and a hanging mass of $m_1 = 3$ kg. The second pendulum has a string of length $L_2 = 1.6$ m and a hanging mass of $m_2 = 9$ kg. How many cycles will the first pendulum go through before the masses come into contact with each other again?

- (A) 1
- (B) 2
- (C) 3
- (D) 4
- (E) 5

Questions 10–12

A box is on an incline of angle θ above the horizontal. The box may be subject to the following forces: frictional (f), gravitational (F_g), tension from a string connected to it (F_T), and normal (N). In the following free-body diagrams for the box, the lengths of the vectors are proportional to the magnitudes of the forces.

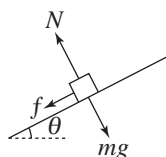


Figure A

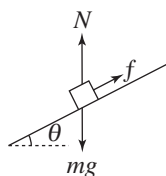


Figure B

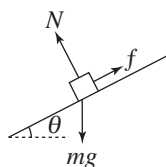


Figure C

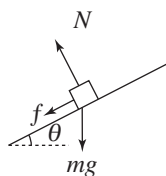


Figure D

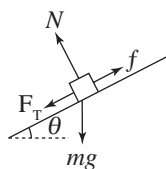


Figure E

10. Which of the following best represents the free-body diagram for the box if it is decelerating as it goes up the incline?
- (A) Figure A
(B) Figure B
(C) Figure C
(D) Figure D
(E) Figure E

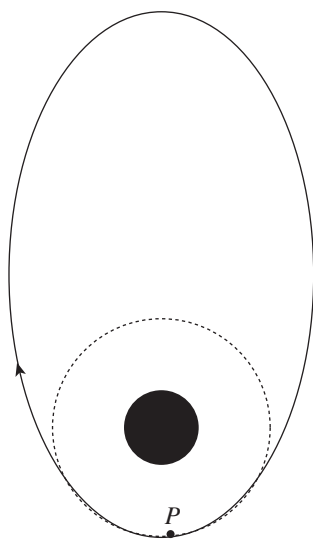
11. Which of the following best represents the free-body diagram for the box if it is moving at a constant velocity down the ramp?
- (A) Figure A
(B) Figure B
(C) Figure C
(D) Figure D
(E) Figure E

12. Which of the following best represents the free-body diagram for the box if its speed is increasing as it moves down the incline?
- (A) Figure A
(B) Figure B
(C) Figure C
(D) Figure D
(E) Figure E

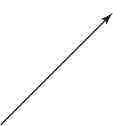
13. The force on an object as a function of time t is given by the expression $F = Ct^3$, where C is a constant. Determine the change in momentum for the time interval 0 to t_1 .

- (A) $\frac{Ct_1^2}{2}$
(B) $\frac{Ct_1^3}{3}$
(C) $\frac{Ct_1^4}{3}$
(D) $\frac{Ct_1^3}{4}$
(E) $\frac{Ct_1^4}{4}$

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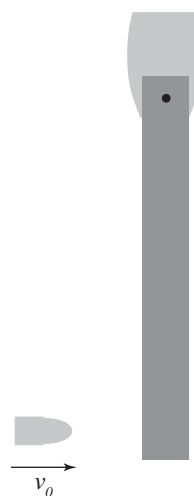
14. A spaceship orbits Earth in a clockwise, elliptical orbit as shown above. The spaceship needs to change to a circular orbit. When the spaceship passes point P , a short burst of the ship's engine will change its orbit. What direction should the engine burst be directed?

- (A) 
- (B) 
- (C) 
- (D) 
- (E) 

15. A motorcycle of mass 200 kg completes a vertical, circular loop of radius 5 m, with a constant speed of 10 m/s. How much work is done on the motorcycle by the normal force of the track?
- (A) 0 J
 (B) 1×10^5 J
 (C) 1×10^6 J
 (D) 4 J
 (E) 10π J

16. A ball with a radius of 0.2 m rolls without slipping on a level surface. The center of mass of the ball moves at a constant velocity, moving a distance of 30 meters in 10 seconds. The angular speed of the ball about its point of contact on the surface is

- (A) 0.6 rad/s
 (B) 3 rad/s
 (C) 8 rad/s
 (D) 15 rad/s
 (E) 60 rad/s



17. A bullet is moving with a velocity v_0 when it collides with and becomes embedded in a wooden bar that is hinged at one end, as shown above. Consider the bullet and the wooden bar to be the system. For this scenario, which of the following is true?
- (A) The linear momentum of the system is conserved because the net force on the system is zero.
 (B) The angular momentum of the system is conserved because the net torque on the system is zero.
 (C) The kinetic energy of the system is conserved because it is an inelastic collision.
 (D) The kinetic energy of the system is conserved because it is an elastic collision.
 (E) Linear momentum and angular momentum are both conserved.

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Questions 18–19

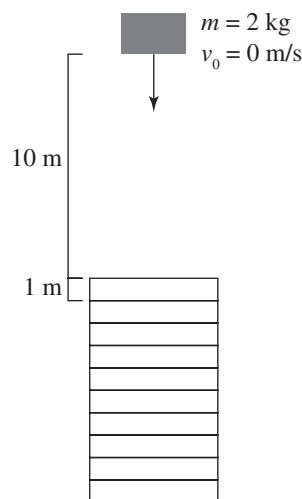
A spring mass system is vibrating along a frictionless, horizontal floor. The spring constant is 8 N/m, the amplitude is 5 cm, and the period is 4 seconds.

18. In kg, the mass of the system is

(A) $32\pi^2$
 (B) $\frac{32}{\pi^2}$
 (C) $\frac{16}{\pi}$
 (D) $\frac{0.2}{\pi^2}$
 (E) $\frac{20}{\pi^2}$

19. Which of the following equations could represent the position of the mass from equilibrium x as a function of time t , where x is in meters and t is in seconds.

(A) $x = 0.05 \cos \pi t$
 (B) $x = 0.05 \cos 2\pi t$
 (C) $x = 0.05 \cos \frac{\pi}{2} t$
 (D) $x = 8 \cos \frac{\pi}{2} t$
 (E) $x = 0.05 \cos \frac{\pi}{4} t$



20. An object of mass $m = 2 \text{ kg}$ is released from rest 10 m above the top of the structure shown above. Each level of the structure is separated by a distance of 1 m. The falling object will crash through the structure, consuming 50 J of energy in order to pass through each barrier. How many barriers can the object break through before it comes to a stop?

(A) 5
 (B) 6
 (C) 7
 (D) 8
 (E) 9

21. For a particular nonlinear spring, the relationship between the magnitude of the applied force, F , and the stretch of the spring, x , is given by the equation $F = kx^{1.5}$. How much energy is stored in the spring when it is stretched a distance x_1 ?

(A) $\frac{2kx_1^{2.5}}{5}$
 (B) $\frac{kx_1^{1.5}}{5}$
 (C) $kx_1^{2.5}$
 (D) $\frac{1}{2}kx_1^2$
 (E) $1.5kx_1^{0.5}$

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Questions 22–23

Two ice skaters are moving on frictionless ice and are about to collide. The 50-kg skater is moving directly west at 4 m/s. The 75-kg skater is moving directly north at 2 m/s. After the collision they stick together.

22. What is the magnitude of the momentum of the two-skater system after the collision?

(A) 50 kg•m/s
(B) 150 kg•m/s
(C) 200 kg•m/s
(D) 250 kg•m/s
(E) 350 kg•m/s

23. For this scenario, which of the following is true?

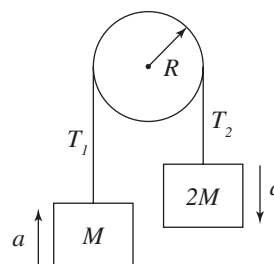
(A) The linear momentum of the system is conserved because the net force on the system is nonzero during the collision.
(B) Only the kinetic energy of the system is conserved because it is an inelastic collision.
(C) Only the kinetic energy of the system is conserved because it is an elastic collision.
(D) The linear momentum of the system is conserved because the net force on the system is zero.
(E) Both the linear momentum and the kinetic energy of the system are conserved.

24. The position of an object is given by the equation $x = 2.0t^3 + 4.0t + 6.25$, where x is in meters and t is in seconds. What is the acceleration of the object at $t = 1.50$ s?

(A) 6 m/s²
(B) 12 m/s²
(C) 18 m/s²
(D) 24 m/s²
(E) 32 m/s²

25. An astronaut in space accidentally becomes disconnected from her ship's tether. In order to get back to safety, she throws a wrench of mass $m = 2$ kg directly away from the ship at a speed $v = 30$ m/s. Given that she has a mass of 60 kg and was at rest before throwing the wrench, how long will it take her to get back to the ship if she is 35 m away from it?

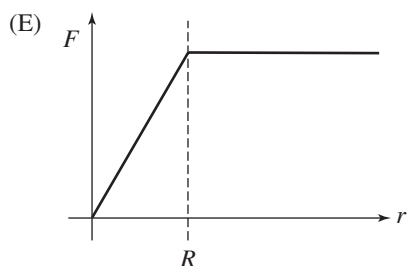
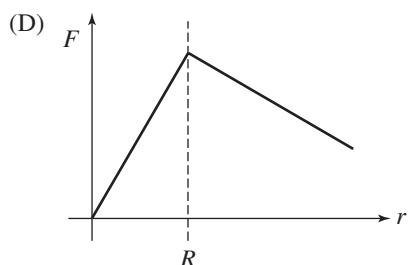
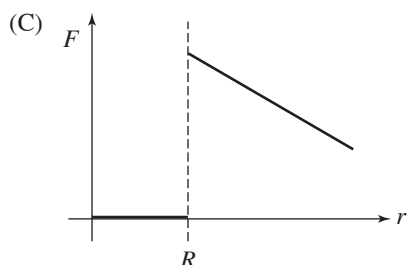
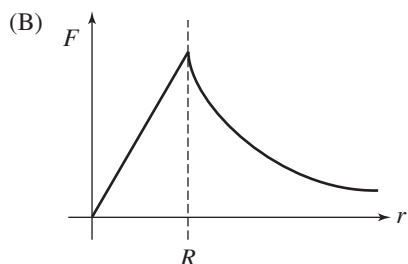
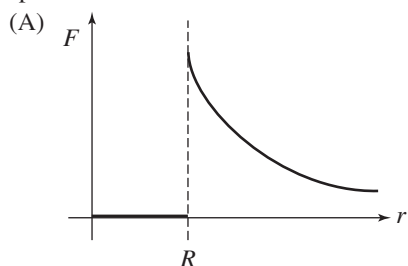
(A) 60 s
(B) 45 s
(C) 35 s
(D) 25 s
(E) 15 s



26. Two blocks of masses M and $2M$ are connected by a light string. The string passes over a pulley, as shown above. The pulley has a radius R and moment of inertia I about its center. T_1 and T_2 are the tensions in the string on each side of the pulley and a is the acceleration of the masses. Which of the following equations best describes the pulley's rotational motion during the time the blocks accelerate?

(A) $(T_2 + T_1)R = Ia$
(B) $(T_2 - T_1)R = Ia$
(C) $(T_2 - T_1)R = I \frac{a}{R}$
(D) $MgR = I \frac{a}{R}$
(E) $3MgR = I \frac{a}{R}$

27. A solid sphere of uniform density with mass M and radius R is located far out in space. A test mass, m , is placed at various locations both within the sphere and outside the sphere. Which graph correctly shows the force of gravity on the test mass vs. the distance from the center of the sphere?



28. The Gravitron is a carnival ride that looks like a large cylinder. People stand inside the cylinder against the wall as it begins to spin. Eventually, it is rotating fast enough that the floor can be removed without anyone falling. Given then the coefficient of friction between a person's clothing and the wall is μ , the tangential speed is v , and the radius of the ride is r , what is greatest mass that a person can be to safely go on this ride?

- (A) $\mu v^2/(rg)$
 (B) $\mu v^2/(r^2g)$
 (C) $r^2v^2/(\mu g)$
 (D) $rg/(\mu v^2)$
 (E) None of the above

29. A simple pendulum of length L , mass m , and amplitude A has a frequency of f on Earth. If this pendulum were moved to the Moon (which has $\frac{1}{6}$ Earth's gravity), what would be its new frequency?

- (A) $\left(\frac{1}{6}\right)^2 f$
 (B) $\left(\frac{1}{6}\right)^{\frac{1}{2}} f$
 (C) $(6^2)f$
 (D) $(6)^{\frac{1}{2}} f$
 (E) f

30. An electric car of mass 300 kg delivers 400 W as it moves the car at a constant 20 m/s. The force delivered by the motor is

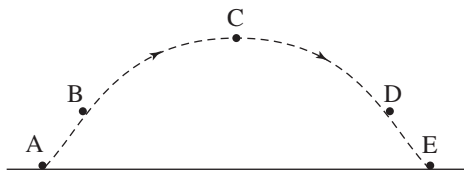
- (A) $\frac{4}{3}$ N
 (B) 20 N
 (C) 600 N
 (D) 6,000 N
 (E) 8,000 N

GO ON TO THE NEXT PAGE.

31. A 2.0 kg mass is attached to the end of a vertical ideal spring with a spring constant of 800 N/m. The mass is pulled down 10 cm from the equilibrium position and then released, so that it oscillates. The kinetic energy of the 2.0 kg mass at the equilibrium position is

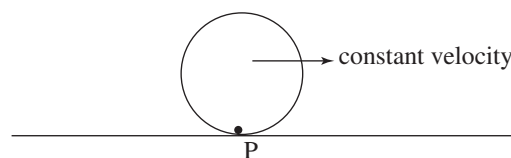
(A) $\frac{2}{3}$ J
 (B) 2 J
 (C) 4 J
 (D) 12 J
 (E) 40 J

32. Physics students are checking the constant acceleration equations of kinematics by measuring the velocity of a tennis ball that is dropped and falls 6 meters and then passes through a photogate. The predicted velocity is 20% above the velocity measured by the photogate. Which of the following best describes the cause of the large percent difference?
- (A) The ball changes its shape while falling.
 (B) The acceleration of gravity varies as the ball is falling.
 (C) Air resistance increases the acceleration of the ball.
 (D) The acceleration of the balls varies with the velocity.
 (E) The acceleration of gravity changes due to air resistance.



33. An object is launched and follows the dashed path shown above. If air resistance is considered, when is the velocity of the object the greatest and the acceleration of the object the greatest?

<u>Greatest Velocity</u>	<u>Greatest Acceleration</u>
(A) A	All equal to g
(B) C	All equal to g
(C) A	A
(D) E	E
(E) A	E



34. A disk is rolling without slipping along the ground and the center of mass is traveling at a constant velocity, as shown above. What direction is the acceleration of the contact point P and the center of mass?

<u>Acceleration of Contact Point P</u>	<u>Acceleration of Center of Mass</u>
(A) Upward	To the right
(B) Upward	Zero
(C) To the right	Zero
(D) To the right	To the right
(E) Upward and to the right	Zero

35. The escape velocity for a rocket launched from the surface of a planet is v_0 . Determine the escape velocity for another planet that has twice the mass and twice the radius of this planet.

(A) $2v_0$
 (B) $\frac{1}{2}v_0$
 (C) $\frac{1}{\sqrt{2}}v_0$
 (D) $\sqrt{2}v_0$
 (E) v_0

STOP

END OF SECTION I, MECHANICS

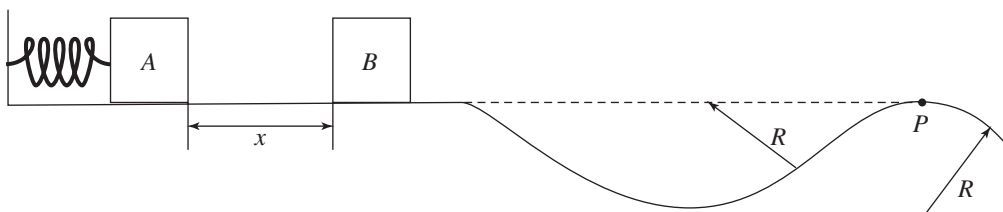
PHYSICS C: MECHANICS

SECTION II

Time—45 minutes

3 Questions

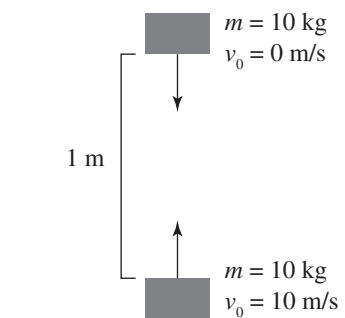
Directions: Answer all three questions. The suggested time is about 15 minutes per question for answering each of the questions, which are worth 15 points each. The parts within a question may not have equal weight.



- A massless spring with force constant k is attached at its left end to a wall, as shown above. Initially, block A and block B , each of mass M , are at rest on a frictionless, level surface, with block A in contact with the spring (but not compressing it) and block B a distance x from block A . Block A is then moved to the left, compressing the spring a distance of d , and held in place while block B remains at rest. First block A is released, then as it passes the equilibrium position it loses contact with the spring. After block A is released it moves forward and has a perfectly inelastic collision with block B and then follows the frictionless, curved path shown above. The radius of the valley and the hill in the diagram are both R . Answer the following in terms of M , k , d , x , g , and R .

 - Determine the speed of block A just before it collides with block B .
 - Determine the speed of block B just after the collision occurs.
 - Determine the change in kinetic energy for the collision.
 - Determine the normal force on the boxes when they are at position P , the top of the hill.

GO ON TO THE NEXT PAGE.



2. As shown above, two blocks of mass $m = 2 \text{ kg}$ are set to collide. The top block, Block 1, is 1 m above the bottom block, Block 2, and is released from rest. At that same moment, the bottom block is launched straight up with an initial speed of 10 m/s. When they collide, the collision will be perfectly inelastic.
- (a) How long after the blocks start moving will the collision occur?
 - (b) How far above the ground will the collision occur?
 - (c) What will be the speeds of the blocks just before collision?
 - (d) After the collision, what is the highest point the blocks will reach?
 - (e) What is the minimum speed with which the bottom block can be launched so that the blocks will reach a height of 1 m after the collision?

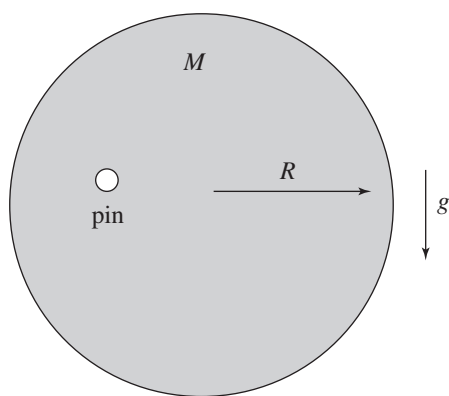


Figure I

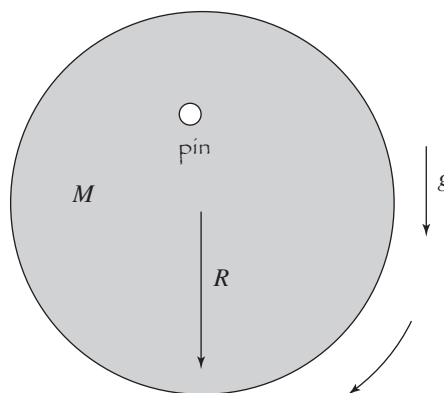


Figure II

3. A disk of mass M and radius R is pinned half of the way along its radius, and held in a horizontal position, as shown in Figure I. The rotational inertia of the disk about its center is $\frac{1}{2}MR^2$. The disk is released at $t = 0$ s, and falls to the vertical position shown in Figure II, and it continues to rotate about the pin. Answer the following in terms of M , R , and g .
- Calculate the rotational inertia of the disk about the pin.
 - Calculate the angular acceleration of the disk at $t = 0$ s.
 - Calculate angular velocity of the disk when it is in the vertical position shown in Figure II.

Now the disk is stopped and brought to rest in the vertical position shown in Figure II. It is given a slight disturbance to an angle θ_0 .

- Calculate the angular frequency of the oscillation.

STOP

END OF SECTION II, MECHANICS

Completely darken bubbles with a No. 2 pencil. If you make a mistake, be sure to erase mark completely. Erase all stray marks.

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☐ MAY	☐ 4 ☐ 4	☐ 4 ☐ 4
☐ JUN	☐ 5 ☐ 5	☐ 5 ☐ 5
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2	C	L	2	2	2	2	2	2	2	2
3	D	M	3	3	3	3	3	3	3	3
4	E	N	4	4	4	4	4	4	4	4
5	F	O	5	5	5	5	5	5	5	5
6	G	P	6	6	6	6	6	6	6	6
7	H	Q	7	7	7	7	7	7	7	7
8	I	R	8	8	8	8	8	8	8	8
9			9	9	9	9	9	9	9	9

4. REGISTRATION NUMBER

7. GENDER

☐ MALE

☐ FEMALE

5. YOUR NAME

First 4 letters of last name				FIRST INIT	MID INIT
A	A	A	A	A	A
B	B	B	B	B	B
C	C	C	C	C	C
D	D	D	D	D	D
E	E	E	E	E	E
F	F	F	F	F	F
G	G	G	G	G	G
H	H	H	H	H	H
I	I	I	I	I	I
J	J	J	J	J	J
K	K	K	K	K	K
L	L	L	L	L	L
M	M	M	M	M	M
N	N	N	N	N	N
O	O	O	O	O	O
P	P	P	P	P	P
Q	Q	Q	Q	Q	Q
R	R	R	R	R	R
S	S	S	S	S	S
T	T	T	T	T	T
U	U	U	U	U	U
V	V	V	V	V	V
W	W	W	W	W	W
X	X	X	X	X	X
Y	Y	Y	Y	Y	Y
Z	Z	Z	Z	Z	Z

1. A B C D E	19. A B C D E	37. A B C D E	55. A B C D E
2. A B C D E	20. A B C D E	38. A B C D E	56. A B C D E
3. A B C D E	21. A B C D E	39. A B C D E	57. A B C D E
4. A B C D E	22. A B C D E	40. A B C D E	58. A B C D E
5. A B C D E	23. A B C D E	41. A B C D E	59. A B C D E
6. A B C D E	24. A B C D E	42. A B C D E	60. A B C D E
7. A B C D E	25. A B C D E	43. A B C D E	61. A B C D E
8. A B C D E	26. A B C D E	44. A B C D E	62. A B C D E
9. A B C D E	27. A B C D E	45. A B C D E	63. A B C D E
10. A B C D E	28. A B C D E	46. A B C D E	64. A B C D E
11. A B C D E	29. A B C D E	47. A B C D E	65. A B C D E
12. A B C D E	30. A B C D E	48. A B C D E	66. A B C D E
13. A B C D E	31. A B C D E	49. A B C D E	67. A B C D E
14. A B C D E	32. A B C D E	50. A B C D E	68. A B C D E
15. A B C D E	33. A B C D E	51. A B C D E	69. A B C D E
16. A B C D E	34. A B C D E	52. A B C D E	70. A B C D E
17. A B C D E	35. A B C D E	53. A B C D E	
18. A B C D E	36. A B C D E	54. A B C D E	

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