



Review Test Submission: Homework Chapter 5

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Course General Physics 1 [Fall 2015]

Test Homework Chapter 5

Started 9/26/15 5:43 PM

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Status Completed

Attempt Score 1.8 out of 6 points

Time Elapsed 11 minutes out of 3 hours

Instructions You will have two attempts to solve multiple choices 20 problems and 3 hours for each attempt to solve all 20 problems. Homework ch.5 should be finish before 11 pm September 27. If you start attempt you should submit this attempt during 3 hours without closing or saving your work. Each question is graded as 0.3 points.

Results All Answers, Submitted Answers, Incorrectly
Displayed Answered Questions

Question 1

0 out of 0.3 points



A 100-kg block is pushed up a 30° incline that is 10 m long. If the coefficient of friction between the block and the incline is 0.1, the constant force parallel to the incline that is required to move the block from rest at the bottom of the incline to the top in 3 s is approximately

Selected Answer: A. 0.49 kN

- Answers:
- A. 0.49 kN
 - B. 0.085 kN
 - C. 0.22 kN
 - D. 0.58 kN

E. 0.80 kN

Question 2

0.3 out of 0.3 points



A tired worker pushes a heavy (100-kg) crate that is resting on a thick pile carpet. The coefficients of static and kinetic friction are 0.6 and 0.4, respectively. The worker pushes with a force of 500 N. The frictional force exerted by the surface is

Selected Answer: A. 500 N

- Answers:
- A. 500 N
 - B. 1000 N
 - C. 600 N
 - D. 400 N
 - E. 100 N

Question 3

0.3 out of 0.3 points



A mass $M = 5.6$ kg on a horizontal table is pulled by a horizontal string that passes over a frictionless pulley to a free-hanging mass $m = 3.4$ kg. The coefficient of friction between M and the table is 0.28. The acceleration of M is

Selected Answer: A. 2.0 m/s^2

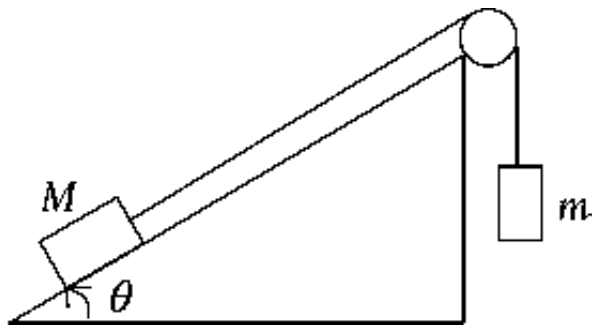
- Answers:
- A. 2.0 m/s^2
 - B. 0.20 m/s^2
 - C. 3.7 m/s^2
 - D. 2.2 m/s^2
 - E. 0.49 m/s^2

Question 4

0 out of 0.3 points



An object with a mass $M = 250$ g is at rest on a plane that makes an angle $\theta = 30^\circ$ above the horizontal. The coefficient of kinetic friction between M and the plane is $\mu_k = 0.100$. Mass M is attached by a string to another mass, $m = 200$ g, which hangs freely. When mass m has fallen 30.0 cm, its speed is



Selected Answer: A. 160 cm/s

- Answers:
- A. 160 cm/s
 - B. 48 cm/s
 - C. 72 cm/s
 - D. 59 cm/s
 - E. 83 cm/s

Question 5

0 out of 0.3 points



A horizontal force \vec{F} is used to push an object of mass m up an inclined plane. The angle between the plane and the horizontal is θ . The normal reaction force of the plane acting on the mass m is

Selected Answer: A. $mg \cos \theta + F \cos \theta$

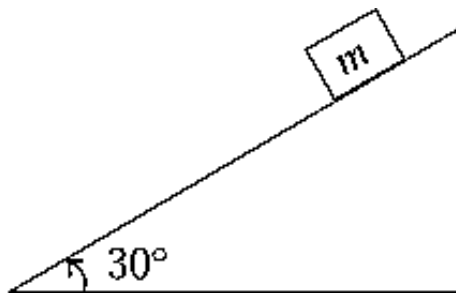
- Answers:
- A. $mg \cos \theta + F \cos \theta$
 - B. $mg \cos \theta - F \cos \theta$
 - C. $mg \cos \theta$
 - D. impossible to determine because the coefficient of friction is not given.
 - E. $mg \cos \theta + F \sin \theta$

Question 6

0 out of 0.3 points



A block of mass m is at rest on an inclined plane that makes an angle of 30° with the horizontal, as shown in the figure. Which of the following statements about the force of static friction is true?



Selected

A. $f_s > mg$

Answer:

Answers:

A. $f_s > mg$ B. $f_s > mg \cos 30^\circ$ C. $f_s = mg \cos 30^\circ$ D. $f_s = mg \sin 30^\circ$

E.

None of these statements is true.

Question 7

0.3 out of 0.3 points



A heavy truck and a light car are traveling at the same speed on the same roadway. If the coefficients of static friction between their tires and the road are the same, which vehicle will be able to stop in the shortest distance? Assume both have the same braking force.

Selected

A.

Answer:

Both will be able to stop in the same distance.

Answers:

A.

Both will be able to stop in the same distance.

B. the car

C. the truck

D.

One cannot tell without knowing their coefficients of kinetic friction.

E.

One cannot tell without knowing their masses.

Question 8

0 out of 0.3 points



A block with a mass of 10 kg is at rest on a horizontal surface. The coefficient of static friction between the

block and the surface is 0.30, and the coefficient of kinetic friction is 0.25. A force of 20 N acts on the block toward the left. The magnitude of the frictional force on the block is

Selected Answer: A. 3.0 N

- Answers:
- A. 3.0 N
 - B. 20 N
 - C. 0.10 kN
 - D. 10 N
 - E. 30 N

Question 9

0 out of 0.3 points



A block of mass M is sliding down a rough inclined surface that makes an angle θ with respect to the horizontal. If the coefficient of static friction is μ_s and kinetic friction μ_k , then the acceleration of the block down the incline is equal to:

Selected Answer: A. $g \sin \theta - g \mu_k \times \sin \theta$

- Answers:
- A. $g \sin \theta - g \mu_k \times \sin \theta$
 - B. $g \sin \theta - g \mu_s \times \cos \theta - g \mu_k \times \cos \theta$
 - C. $g \sin \theta - g \mu_s \times \cos \theta$
 - D. $g \mu_s \times \cos \theta - g \sin \theta$
 - E. $g \sin \theta - g \mu_k \times \cos \theta$

Question 10

0 out of 0.3 points



A 50-kg box is placed in the bed of a truck. The coefficient of friction between the box and the truck bed is 0.54. If the truck is traveling at 87 km/h (~54 mph) then calculate the minimum distance the truck can stop in without the box sliding into the cab.

Selected Answer: A. 1.2×10^2 m

- Answers:
- A. 1.2×10^2 m
 - B. 55 m
 - C. 99 m

D. $2.8 \times 10^2 \text{ m}$

E. $1.4 \times 10^3 \text{ m}$

Question 11

0 out of 0.3 points



If a jet plane doubles the speed, the drag force on the jet plane

Selected Answer:

A. is unchanged

Answers:

A. is unchanged

B. doubled

C. depends how many passengers the plane is carrying

D. decreases by hal

E. quadrupled

Question 12

0 out of 0.3 points



A car going around a curve of radius R at a speed V experiences a centripetal acceleration a_c . What is its acceleration if it goes around a curve of radius $3R$ at a speed of $2V$?

Selected Answer: A. $(9/2)a_c$

Answers:

A. $(9/2)a_c$

B. $(3/2)a_c$

C. $(2/9)a_c$

D. $(2/3)a_c$

E. $(4/3)a_c$

Question 13

0 out of 0.3 points



A particle moving with uniform Motion Along a Curved Path has a period of 0.24 s and a speed of 4.2 m/s. The radius of the path of the particle is

Selected Answer: A. 0.062 cm

Answers:

A. 0.062 cm

- B. 1.0 m
- C. 1.4 cm
- D. 2.6 cm
- E. 16 cm

Question 14

0 out of 0.3 points



A proud new Jaguar owner drives her car at a speed of 25 m/s into a corner. The coefficients of friction between the road and the tires are 0.70 (static) and 0.40 (kinetic). What is the minimum radius of curvature for the corner in order for the car not to skid?

Selected Answer: A. 3.5×10^2 m

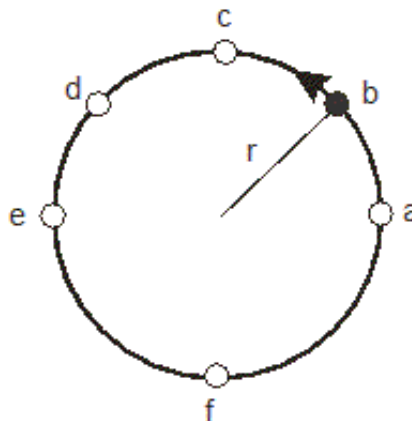
- Answers:
- A. 3.5×10^2 m
 - B. 1.6×10^2 m
 - C. 91 m
 - D. 64 m
 - E. 2.1×10^2 m

Question 15

0 out of 0.3 points



A ball of mass m is attached to a thin string and whirled in a vertical circle of radius r . The tension in the string at point e where the ball is moving with speed v is



Selected Answer: B. $mg - mv^2/r$

- Answers:
- A. mg
 - B. $mg - mv^2/r$

C. $mg + mv^2/r$

D. mv^2/r

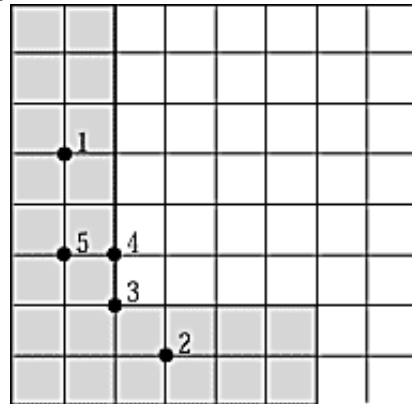
E. none of the above.

Question 16

0 out of 0.3 points



An L-shaped piece, represented by the shaded area on the figure, is cut from a metal plate of uniform thickness. The point that corresponds to the center of mass of the L-shaped piece is



Selected Answer: E. 5

Answers:

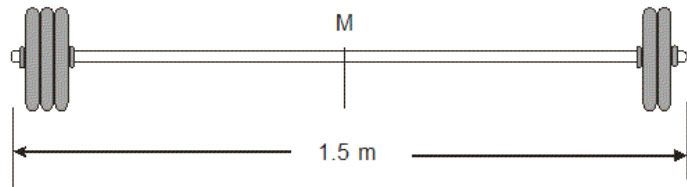
- A. 1
- B. 2
- C. 3
- D. 4
- E. 5

Question 17

0.3 out of 0.3 points



A barbell is 1.5 m long. Three weights, each of mass 20 kg, are hung on the left and two weights of the same mass, on the right. The width of each weight is 4 cm and each group of weights is placed 4 cm from the ends. Where is the center of mass of the barbell as measured from the mid-point, M, of the bar? The bar is of uniform mass and has mass 5 kg, and the retaining collars are of negligible mass. Take to the right as positive.



Selected Answer: B. -11.6 cm

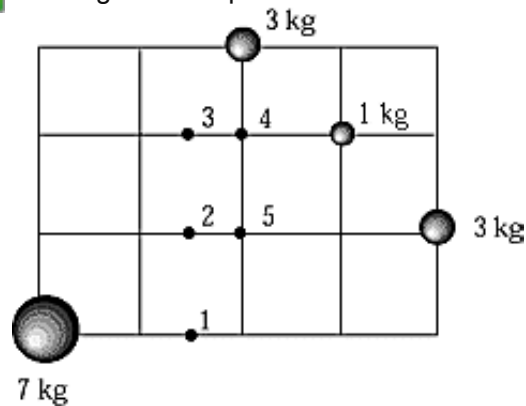
- Answers:
- A. -5.90 cm
 - B. -11.6 cm
 - C. +13.7 cm
 - D. +5.90 cm
 - E. None of the above

Question 18

0.3 out of 0.3 points



The center of mass of the system of particles shown in the diagram is at point



Selected Answer: B. 2

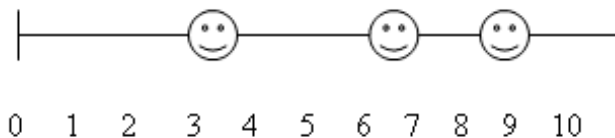
- Answers:
- A. 1
 - B. 2
 - C. 3
 - D. 4
 - E. 5

Question 19

0 out of 0.3 points



Three smiley faces are situated along the x axis as follows: $m_1 = 5$ kg at 3.0 m, $m_2 = 3$ kg at 6.0 m and $m_3 = 2$ kg at 8.0 m. Where is the center of mass situated?



Selected Answer: B. 5.5 m

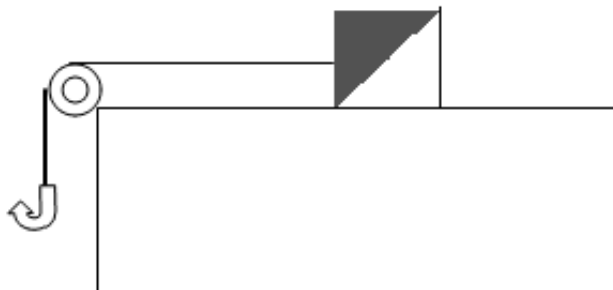
- Answers:
- A. 5.1 m
 - B. 5.5 m
 - C. 3.9 m
 - D. 4.1 m
 - E. 4.9 m

Question 20

0.3 out of 0.3 points



A box ($M = 20$ kg) is sliding on a horizontal surface. It is connected to a massless hook by a light string passing over a massless pulley wheel. The coefficients of friction between the box and the surface are 0.80 (static) and 0.30 (kinetic). If 15 kg (in total) are placed on the hook, calculate the acceleration of the box.



Selected Answer: A. 2.5 m/s

- Answers:
- A. 2.5 m/s
 - B. 10 m/s
 - C. 4.4 m/s
 - D. 12 m/s
 - E. 0

Saturday, September 26, 2015 5:55:05 PM EDT

← OK