أسئلة مراجعة نهائية وفق الهيكل الوزاري منهج انسباير

موقع المناهج ⇦ المناهج الإماراتية ⇦ الصف الحادي عشر العام ⇦ فيزياء ⇦ الفصل الأول ⇦ ملفات متنوعة ⇦ الملف

تاريخ إضافة الملف على موقع المناهج: 2024-11-16 11:56:22

المزيد من مادة فيزياء:	ملفات ا كتب للمعلم ا كتب للطالب ا اختبارات الكترونية ا اختبارات ا حلول ا عروض بوربوينت ا أوراق عمل منهج انجليزي ا ملخصات وتقارير ا مذكرات وبنوك ا الامتحان النهائي ا للمدرس

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التواصل الاجتماعي بحسب الصف الحادي عشر العام

صفحة المناهج الإماراتية على فيسبوك					
المواد على تلغرام	التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات	

المزيد من الملفات بحسب الصف الحادي عشر العام والمادة فيزياء في الفصل الأول

1	تلخيص وحل أسئلة وحدات الكتاب وفق الهيكل الوزاري القسم الكتابي
2	تلخيص وحل أسئلة وحدات الكتاب وفق الهيكل الوزاري القسم الالكتروني
3	تجميعة أسئلة صفحات الكتاب وفق الهيكل الوزاري منهج بريدج الخطة C
4	تجميعة صفحات الكتاب وفق الهيكل الوزاري منهج بريدج
5	ترجمة الهيكل الوزاري الجديد المسار العام منهج بريدج الخطة C-101

Physics 11 G EOT

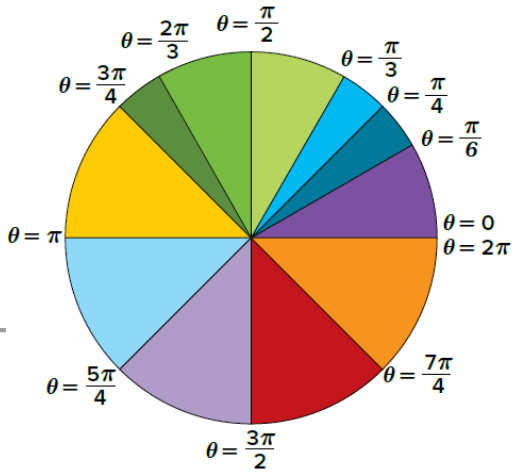
استعن بما يلزم من الثوابت والعلاقات الرياضية التالية: You may use any of the given constants and equations where needed:		
$a_y = -9.8\ m/s^2$	$G = 6.67 \times 10^{-11} N.m^2 kg^2$	$\tau = Frsin\theta$
$v_x = v_i cos\theta$	$F_g = \frac{Gm_1 m_2}{r^2}$	$x = r\theta$
$x = v_x t$	$T = 2\pi\sqrt{\frac{r^3}{Gm_E}}$	$\omega = \frac{\Delta\theta}{\Delta t}$
$a_c = \frac{4\pi^2 r}{T^2}$	$v = \sqrt{\frac{Gm_E}{r}}$	$v = r\omega$
$f = \frac{1}{T}$	$g = \frac{Gm}{r^2}$	$\alpha = \frac{\Delta\omega}{\Delta t}$
$\omega = 2\pi f$	$a_c = \frac{v^2}{r}$	$F_c = ma_c$

اجابات الاسئلة

https://www.youtube.com/watch?v=nKPQwcOd0js

What is the degree equivalent of π radians?

A) 90°
B) 180°
C) 270°
D) 360°



How many radians are in 45°?

A) $\frac{\pi}{6}$ B) $\frac{\pi}{4}$

C) $\frac{\pi}{2}$ D) $\frac{\pi}{3}$

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to convert an angle from degrees to radians we multiply by the following factor ……

A) $\frac{\pi}{180}$ B) $\frac{2\pi}{180}$

C) $\frac{180}{\pi}$ D) $\frac{\pi}{3}$

Which of the following is true about angular displacement?

A) Angular displacement is always measured in meters.

B) Clockwise rotation is designated as positive angular displacement.

C) Counter clockwise rotation is designated as positive angular displacement.

D) Angular displacement has no direction.

Quantity	Linear	Angular	Relationship
Acceleration	a (m/s^2)	α (rad/s^2)	$a = r\alpha$

What is the formula for linear acceleration a of a point at a distance r from the axis of an object with angular acceleration α?

A) $a = r\alpha^2$

B) $a = r\alpha$

C) $a = \frac{r}{\alpha}$

D) $a = \frac{\alpha}{r}$

If a truck has a linear acceleration of 1.85 m/s² and the wheels have an angular acceleration of 5.23 rad/s², what is the diameter of the wheels?

A) 0.35 m

B) 0.71 m

C) 1.85 m

D) 2.10 m

What does a positive change in angular velocity indicate about the angular acceleration?

A) The angular acceleration is negative.

B) The angular acceleration is zero.

C) The angular acceleration is positive.

D) The angular acceleration is undefined.

Which of the following correctly defines torque?

A) Torque is equal to the force times the radius (r).

B) Torque is equal to the force times the lever arm (r sin θ).

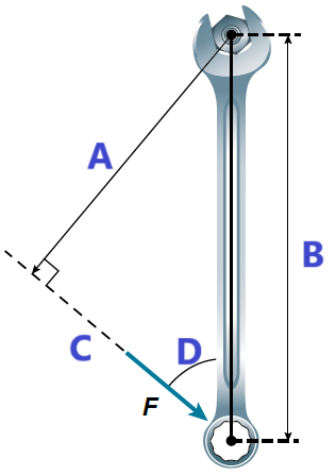
C) Torque is equal to the force divided by the radius (r).

D) Torque is equal to the force times lever arm (r cos θ).

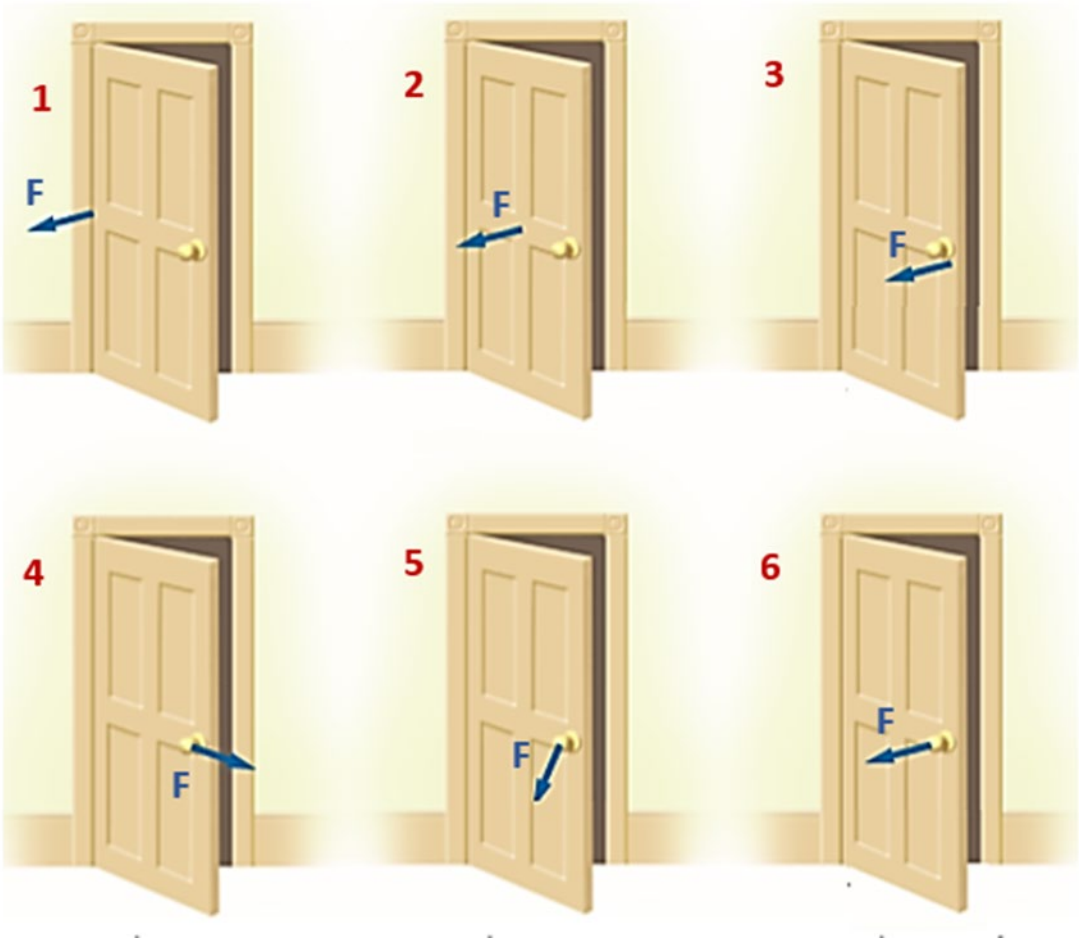
Which of the following best defines the term *lever arm*?

A) The force applied to a lever to produce rotation.
B) The perpendicular distance between the axis of rotation and the point where force is applied.
C) The parallel distance between the axis of rotation and the point where force is applied.
D) The total length of a lever, regardless of where force is applied.

Which letter represents the lever arm?

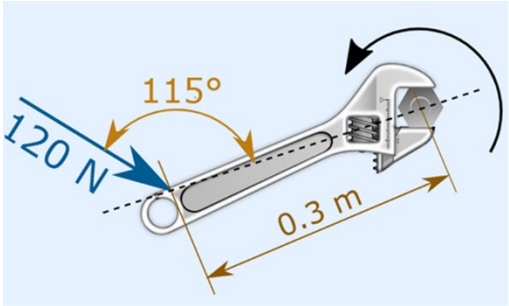


The figure shows a force F exerted on a door in six positions. In which of these positions the torque exerted on the door equals zero?



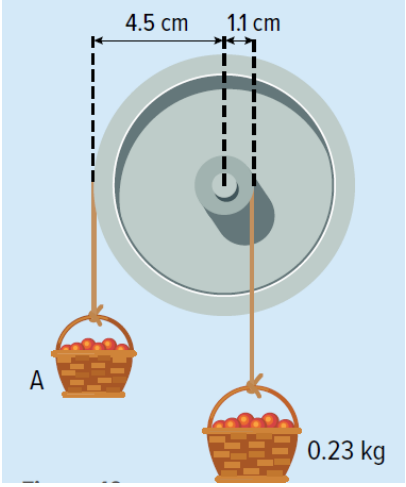
A) 1 & 4
B) 2 & 3
C) 5 & 6
D) 2 & 5

A spanner is used to loosen a bolt as seen in the figure. What is the torque exerted on the bolt?



A) 72.6 N. m
B) 32.6 N. m
C) 44.8 N. m
D) 55.2 N. m

Two stationary baskets of fruit hang from strings on pulleys of different diameters, as shown in What is the mass of basket A?



A) 0.065 Kg
B) 0.253 Kg
C) 1.035 Kg
D) 0.056 Kg

Ali, whose mass is 43 kg, sits 1.8 m from a pivot at the center of a seesaw. Rashed, whose mass is 52 kg, wants to play with Ali. How far from the center of the seesaw should Rashed sit?

A) 1.2 m
B) 1.5 m
C) 1.8 m
D) 2.1 m

For an object to be in translational equilibrium, which of the following must be true?

A) The net torque on the object must be zero.

B) The object must be at rest.

C) The net external force on the object must be zero.

D) The object must experience an upward force.

Which condition must be satisfied for an object to be in rotational equilibrium?

A) The net torque on the object must be zero.

B) The object must be moving at a constant velocity.

C) All forces acting on the object must be equal.

D) The object must be in a state of free fall.

If an object is in static equilibrium, which of the following statement is true?

A) The object may be moving but not accelerating.

B) The object has zero net force and zero net torque acting on it.

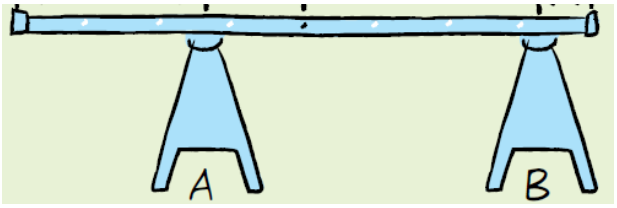
C) The object must be experiencing no forces at all.

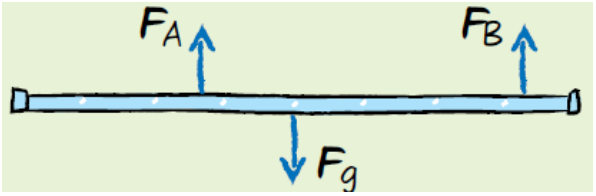
D) The object is in motion with constant acceleration.

The figure shows Mohammad and his sister Laila playing on a seesaw, which of the following can lead to the balance of the seesaw?

A) Laila moves closer to Mohammad
B) Mohammad moves closer to Laila
C) Muhammad and Laila move towards each other the same distance
D) Mohammad and Laila move away from each other the same distance

A 5.8-kg ladder, 1.80 m long, rests on two sawhorses. As Shown and the ladder in static equilibrium Which of the following is True?





A) $F_A = F_g + F_B$

B) $F_A = F_g - F_B$

C) $F_B\, r_B = F_g\, r_g - F_A\, r_A$

D) $F_B\, r_B = F_g\, r_g + F_A\, r_A$

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1. According to Newton's Second Law for Rotational Motion, which of the following correctly represents the relationship between angular acceleration (α), net torque (τ_{net}), and moment of inertia (I)?

A) $\alpha = \frac{\tau_{\text{net}}}{I}$
B) $\alpha = \tau_{\text{net}} \times I$
C) $\alpha = \frac{I}{\tau_{\text{net}}}$
D) $\alpha = \tau_{\text{net}} + I$

If the net torque on an object is doubled while its moment of inertia remains constant, what happens to the angular acceleration?

A) It remains the same.

B) It doubles.

C) It halves.

D) It becomes zero.

3. Which of the following statements is true about the relationship between torque and angular velocity?

A) If the torque and angular velocity are in the same direction, the angular velocity decreases.

B) If the torque and angular velocity are in opposite directions, the angular velocity increases.

C) If the torque and angular velocity are in the same direction, the angular velocity increases.

D) The direction of torque does not affect the angular velocity.

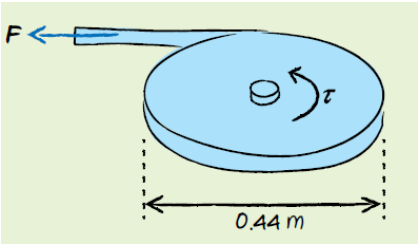
A solid steel wheel is free to rotate about a motionless central axis. It has a mass of 15 kg and a diameter of 0.44 m, and it starts at rest. You want to increase this wheel's rotation about its central axis to 8.0 rev/s in 15 s.
What torque must be applied to the wheel?

A) 2.5 N·m

B) 1.2 N·m

C) 10.0 N·m

D) 20.0 N·m



A solid steel wheel is free to rotate about a motionless central axis. It has a mass of 15 kg and a diameter of 0.44 m, and it starts at rest. You want to increase this wheel's rotation about its central axis to 8.0 rev/s in 15 s.

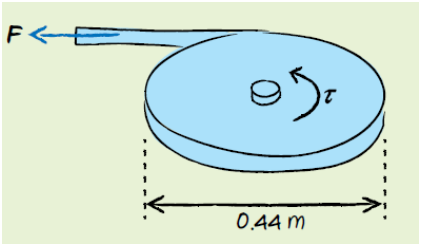
If you apply the torque by wrapping a strap around the outside of the wheel, how much force should you exert on the strap?

A) 12.5 N

B) 5.5 N

C) 4.0 N

D) 2.0 N



A rope is wrapped around a pulley and pulled with a force of 13.0 N. The pulley's radius is 0.150 m. The pulley's rotational speed increases from 0.0 to 14.0 rev/min in 4.50 s. What is the moment of inertia of the pulley?

A) 4.09 kg·m²

B) 5.99 kg·m²

C) 0.13 kg·m²

D) 8.18 kg·m²

1. What is the definition of impulse in physics?

A) The product of an object's mass and velocity.

B) The rate of change of momentum of an object.

C) The product of the average force on an object and the time interval over which it acts.

D) The area under a velocity-time graph.

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2. If the force on an object varies with time, how can you determine the magnitude of the impulse?

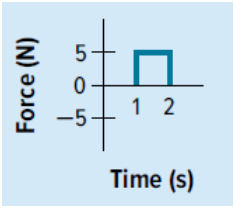
A) By calculating the total force applied to the object.

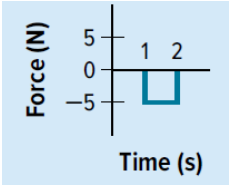
B) By multiplying the average force by the time interval.

C) By finding the area under the force-time graph.

D) By integrating the velocity of the object over time.

A 7.0-kg object, moving at 2.0 m/s, receives two impulses (one after the other) along the direction of its motion. Both of these impulses are illustrated in Figure.
Find the resulting speed of motion of the object after each impulse.





	First impulse	Second impulse
A	2.7 m/s	2.3 m/s
B	1.3 m/s	2.7 m/s
C	2.7 m/s	1.3 m/s
D	1.3 m/s	2.3 m/s

What does Newton's third law state about the forces exerted by two objects during a collision?

A) The forces exerted on each object are equal in magnitude and opposite in direction.

B) The force exerted on one object is greater than the force exerted on the other.

C) The force exerted on each object is equal but not opposite.

D) The force exerted on one object is zero while the other object exerts a force.

According to the impulse-momentum theorem, how do the impulses exerted by two objects during a collision compare?

A) The impulses are equal in magnitude and opposite in direction.

B) The impulses are equal in magnitude and direction.

C) The impulse on the first object is twice the impulse on the second object.

D) The impulse on the first object is zero, while the impulse on the second object is nonzero.

How do the masses of the balls affect the forces and impulses they exert on each other during a collision?

A) The forces exerted on each other are affected by the masses of the balls.

B) The impulses exerted on each other are affected by the masses of the balls.

C) The forces and impulses exerted on each other are independent of the masses of the balls.

D) The larger ball exerts a greater impulse than the smaller ball.

When the red and blue balls collide, how do the forces they exert on each other compare?

A) The force exerted by the red ball on the blue ball is greater because it is larger.

B) The force exerted by the blue ball on the red ball is greater because it is moving faster.

C) The forces are equal in magnitude but opposite in direction.

D) The force depends on the masses and velocities of the balls.

Considering Newton's third law, which statement best describes the impulses imparted by the two balls on each other during the collision?

A) The red ball imparts a greater impulse on the blue ball because it is larger.

B) The blue ball imparts a smaller impulse on the red ball due to its smaller mass.

C) The impulses exerted by the two balls on each other are equal in magnitude but opposite in direction.

D) The impulse exerted by each ball is proportional to the velocity of the ball.

If the red ball has a larger mass than the blue ball, how does this affect the forces and impulses during their collision?

A) The larger mass of the red ball means it exerts a greater force on the blue ball.

B) The forces are equal in magnitude but opposite in direction, regardless of mass.

C) The red ball will have a smaller impulse due to its larger mass.

D) The mass of the balls affects only the force but not the impulse.

Which of the following best defines an isolated system?

A) A system in which no forces act on any objects within it.

B) A system where no matter or energy is exchanged with its surroundings.

C) A system in which the net external force acting on it is zero.

D) A system that contains only a single object with no external forces.

A movie lasts 2 h. During that time, what is the angular displacement of the hour hand

A) 90°
B) 180°
C) 60°
D) 360°

In the spin cycle of a clothes washer, the drum turns at 635 rev/min. If the lid is opened, the motor is turned off. If the drum requires 8.0 s to slow to a stop, what is the angular acceleration of the drum?

$$\alpha = \frac{\Delta\omega}{\Delta t}$$

A) + 8.31 rad/s^2
B) - 8.31 rad/s^2
C) + 79.4 rad/s^2
D) - 79.4 rad/s^2

Which law or formula is used to find the angular frequency (ω) in terms of the period (T)?

A. $\omega = \frac{v}{r}$

B. $\omega = \frac{2\pi}{T}$

C. $\omega = r \times v$

D. $\omega = T \times r$

Which law or formula is used to find the linear speed (v) from the angular speed (ω)?

A. $v = \omega \times T$

B. $v = \frac{2\pi}{\omega}$

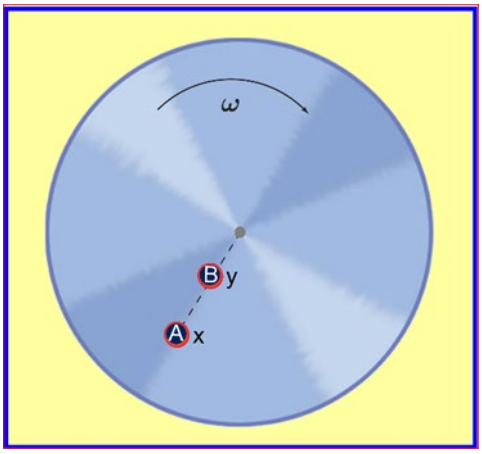
C. $v = r \times \omega$

D. $v = \frac{\omega}{r}$

Suppose a Ferris wheel in Dubai has a frequency of 0.1 Hz. What is the angular velocity of the Ferris wheel in rad/s?

A) ***0.2π***
B) ***0.1π***
C) ***10π***
D) ***20π***

The figure shows a rotating disk ad two spots on it A and B. (A) is at (X) cm from the disk's center and (B) is at (Y) cm from the disk's center. How can the angular velocities of the two spots be compared?



A) The angular velocity of both spots will be equal and nonzero

B) The angular velocity of spot (B) will be greater than spot (A)

C) The angular velocity of spot (A) will be greater than spot (B)

D) The angular velocity of both spots will be zero

A blender blade spins from rest to 9000 rev/min in 4.5 s. What is the angular acceleration in rad/s^2

A) 220 rad/s^2
B) 120 rad/s^2
C) 209 rad/s^2
D) 240 rad/s^2

The Moon (r = 1.74 x 10^6 m) rotates once on its axis in 27.3 days. What is the frequency of its rotation in rad/s? A rock sits on the surface at the Moon's equator. What is its linear speed due to the Moon's rotation?

	Frequency (rad/s)	linear speed (m/s)
A	2.36 x 10^6	4.63
B	2.66 × 10^{-6}	5.62
C	2.66 × 10^{-6}	4.63
D	2.36 x 10^6	5.62

What is the point on an object that moves in the same way a point particle would move, representing the average location of its mass?

A. Center of Gravity

B. Center of Mass

C. Equilibrium Point

D. Moment of Inertia

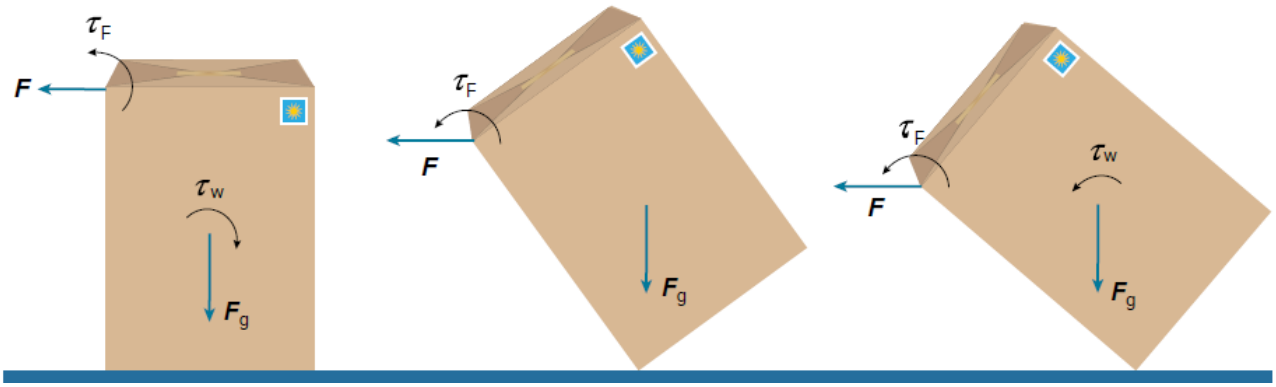
How do different points on Earth move as it rotates?

A) Different points on Earth rotate at different angular velocities because of their varying latitudes.

B) All points on Earth rotate at the same angular velocity, even though they cover different distances.

C) Only points near the equator rotate, while others remain stationary.

D) Different points on Earth have the same linear velocity during rotation.



Why is a tall, narrow box more likely to tip over than a low, broad box?

A. A tall box has a center of mass that's too low

B. The tall box has a higher center of mass, which increases stability

C. A higher center of mass in the tall box makes it more likely to tip over.

D. The low, broad box has an unstable center of mass position

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Which of the following is true about larger vehicles compared to smaller vehicles in terms of stability and centre of mass?

A. Larger vehicles have a higher center of mass, making them more stable.

B. Smaller vehicles tend to have a lower center of mass, making them less stable.

C. Larger vehicles have a higher center of mass, which can make them less stable in turns.

D. Smaller vehicles are less likely to roll over because their center of mass is higher.

Which statement best describes the rotation of a rigid body?

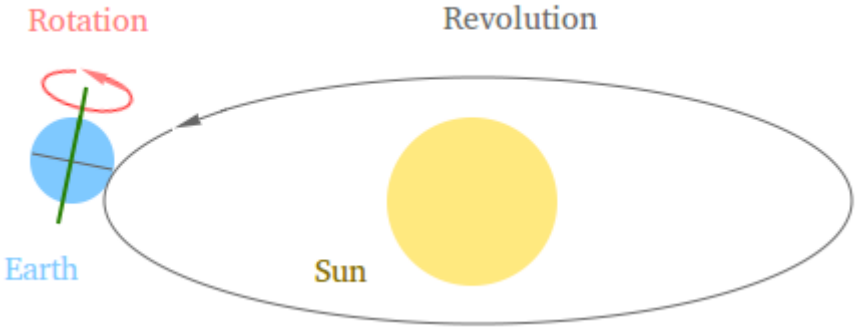
A) All points in a rigid body rotate at different rates based on their distance from the axis.

B) Only the points along the axis of a rigid body rotate, while the outer points remain still.

C) All points in a rigid body rotate at the same angular velocity, even if the distances covered differ.

D) A rigid body cannot rotate; it only translates.

How does the Sun's rotation differ from Earth's?



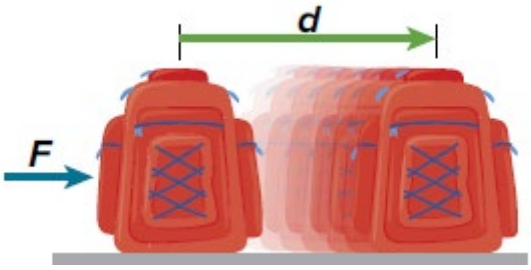
A) Like Earth, the Sun rotates as a rigid body at the same rate across all latitudes.

B) The Sun rotates at different angular velocities in different parts, unlike Earth, which rotates as a rigid body.

C) The Sun and Earth both rotate at the same angular velocity but cover different distances.

D) The Sun rotates only at the poles, while Earth rotates uniformly.

Which of the following statements correctly defines this work?



A. Work is equal to the force applied multiplied by the time taken for the displacement.

B. Work is equal to the force applied multiplied by the displacement

C. Work is equal to the change in kinetic energy of the object.

D. Work is equal to the product of mass and acceleration during the displacement.

Which of the following is the correct equivalent unit for 1 joule (J)?

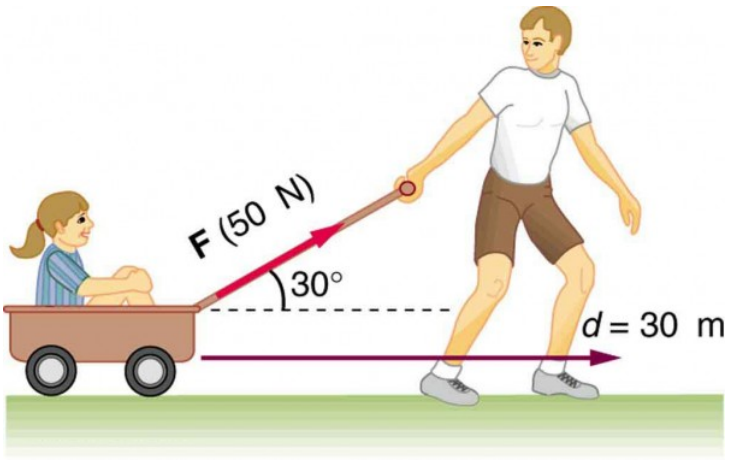
A. 1 N/m

B. 1 N/m^2

C. 1 N·m

D. 1 N.s

Look at the following diagram which of the following is the correct formula to find the work done



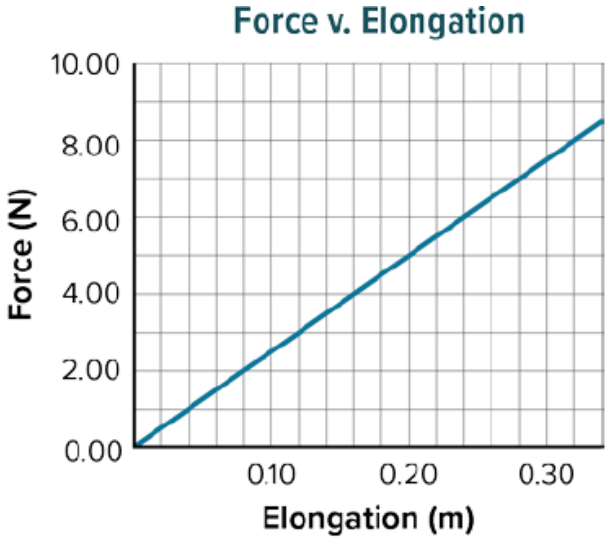
A) W = 50 x 30 J

B) W = 50 x 30 x cos 30 J

C) W = 50 x cos 30 J

D) W = $\frac{50}{30}$ J

Use the following graph to find the work done to stretch the spring from 0 m to 0.20 m



A- 5 J B- 0.25 J C- 0.50 J 0.20 J

Which of the following best describes the ability of a system to produce a change in itself or the world around it?

A. Force

B. Power

C. Energy

D. Momentum

According to the work-energy theorem, when work is done on a system, what is the result?

A. A change in the system's temperature

B. A change in the system's energy

C. A change in the system's momentum

D. A change in the system's velocity

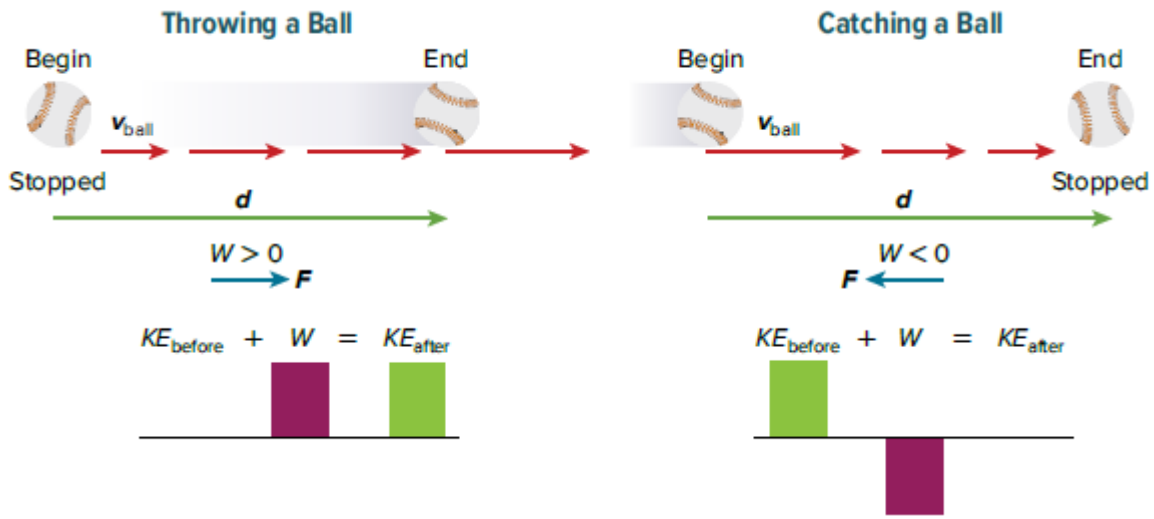
A catamaran with a mass of 5.44×10^3 kg is moving at 12 knots. How much work is required to increase its speed to 16 knots? (One knot = 0.51 m/s)

A. 2.1×10^4 J

B. 4.3×10^4 J

C. 6.8×10^4 J

D. 8.1×10^4 J



After the ball is caught and comes to rest, what happens to its kinetic energy?

A. It increases

B. It decreases

C. It remains the same

D. It becomes zero

When catching a moving ball, you exert a force opposite to its motion. What effect does this have on the ball's kinetic energy?

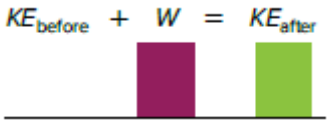
A. It causes the ball's kinetic energy to increase

B. It causes the ball's kinetic energy to decrease

C. It causes the ball's potential energy to increase

D. It causes the ball's kinetic energy to remain constant

In the energy bar diagram of throwing a ball, what does the height of the bar represent?



A. The mass of the ball
B. The velocity of the ball
C. The amount of work done (in joules)
D. The gravitational force on the ball

Which of the following is the correct formula to find power?

A. $P = \frac{\Delta E}{t}$
B. $P = \frac{E}{t}$
C. $P = \Delta E \times t$
D. $P = \frac{t}{\Delta E}$

Which of the following represents the correct equivalent unit for 1 watt (W)?

A. 1 W = 1 N·m

B. 1 W = 1 J/s

C. 1 W = 1 kg·m/s

D. 1 W = 1 J·m

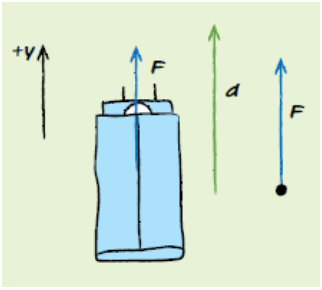
n electric motor lifts an elevator 9.00 m in 15.0 s by exerting an upward force of 1.20×10^4 N. What power does the motor produce in kW?

A. 0.7 kW

B. 1.4 kW

C. 7.2 kW

D. 2.2 kW



Written part

A rotating toy above a crib makes one complete counterclockwise rotation in 1 min.

a. What is its angular displacement in 3 min?

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……..

b. What is the toy's angular velocity in rad/min?

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……..

c. If the toy is turned off, does it have positive or negative angular acceleration?

……
……..