مراجعة نهائية الوحدة الخامسة power and work energy Kinetic الطاقة الحركية والعمل والاستطاعة منهج انسباير

تاريخ إضافة الملف على موقع المناهج: 2025-01-08 22:39:15

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 المتقدم

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

المزيد من الملفات بحسب الصف الحادي عشر المتقدم والمادة فيزياء في الفصل الثاني

1	الدروس المطلوبة في الفصل الثاني منهج انسباير
2	أوراق عمل الدرس السابع Power الاستطاعة من الوحدة الخامسة
3	أوراق عمل الدرس السادس force spring قوة النابض من الوحدة الخامسة
4	أوراق عمل الدروس الثالث والرابع والخامس العمل والعمل المنجز من قوة ثابتة وقوة متغيرة من الوحدة الخامسة

5	أوراق عمل الدرس الثاني energy Kinetic الطاقة الكامنة من الوحدة الخامسة

Topic 5 Practice Questions

Which of the following is NOT a correct unit for work?

A. Joule (J)

B. Newton-meter

C. Watt-second

D. Newton-second

Kinetic energy is:

A. A Positive scalar quantity
B. A Negative scalar quantity
C. A Positive vector quantity
D. A Negative vector quantity

In which of the following situations is the net work done equal to zero?

A. A book is lifted vertically upward at constant velocity.
B. A car accelerates along a straight road.
C. A satellite orbits Earth in a circular path at constant speed.
D. A spring is compressed and then released.

How much work do you do as you exert a 75-N force to push a shopping cart through a 12-m-long supermarket aisle?

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If the coefficient of kinetic friction is 0.21, how much work do you do when you slide a 50-kg box at constant speed across a 4.8-m-wide room?

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A crane lifts a 650-kg beam vertically upward 23 m and then swings it eastward 18 m. How much work does the crane do? Neglect friction, and assume the beam moves with constant speed.

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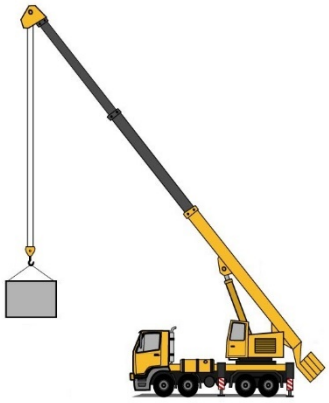

How much work is done when a 75.0-kg person climbs a flight of stairs 10.0 m high at constant speed?

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An 800-N box is pushed up an inclined plane that is 4.0 m long. It requires 3200 J of work to get the box to the top of the plane, which is 2.0 m above the base. What is the magnitude of the average friction force on the box? (Assume the box starts at rest and ends at rest.)

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To push a stalled car, you apply a 470-N force at 17 ° to the car's motion, doing 860 J of work in the process. How far do you push the car?

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$$\Delta r = \frac{W}{F\cos\theta} = \frac{860\ \text{J}}{(470\ \text{N})\cos(17^\circ)} = 1.9\ \text{m}$$

A 4.0 kg object is moving with speed 2.0 m/s. A 1.0 kg object is moving with speed 4.0 m/s. Both objects encounter the same constant braking force, and are brought to rest. Which object travels the greater distance before stopping?

A) the 4.0 kg object
B) the 1.0 kg object
C) Both objects travel the same distance.
D) It cannot be determined from the information given.

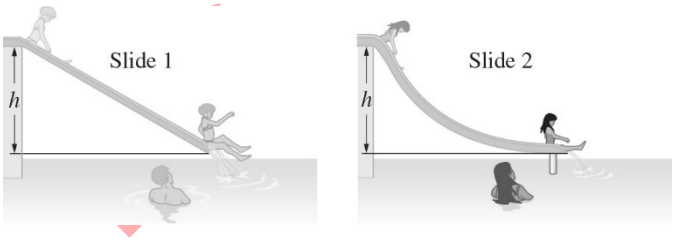
You slam on the brakes of your car in a panic, and skid a certain distance on a straight level road. If you had been traveling twice as fast, what distance would the car have skidded, under the same conditions?

A) It would have skidded 4 times farther.
B) It would have skidded twice as far.
C) It would have skidded 1.4 times farther.
D) It would have skidded one half as far.

A stone is held at a height *h* above the ground. A second stone with four times the mass of the first one is held at the same height. The gravitational potential energy of the second stone compared to that of the first stone is

A) one-fourth as much.
B) one-half as much.
C) twice as much.
D) four times as much.

Swimmers at a water park have a choice of two frictionless water slides, as shown in the figure. Although both slides drop over the same height *h*, slide 1 is straight while slide 2 is curved, dropping quickly at first and then leveling out. How does the speed *v*1 of a swimmer reaching the bottom of slide 1 compare with *v*2, the speed of a swimmer reaching the end of slide 2?



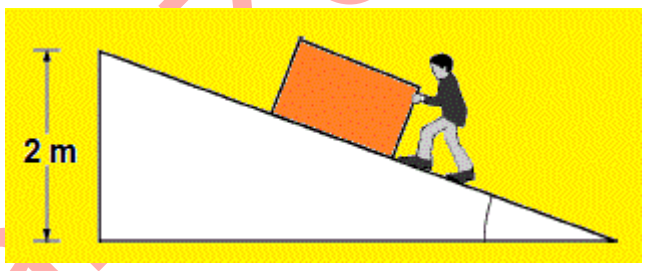
A) $v1 > v2$
B) $v1 < v2$
C) $v1 = v2$
D) The heavier swimmer will have a greater speed than the lighter swimmer, no matter which slide he uses.

Initially an object of mass 1.00 kg is moving to the left at 10.0 m/s. If 150 J of work is done on the object, then how fast will it be moving?

a. 17.3 m/sec
b. 20.0 m/sec
c. 25.0 m/sec
d. 27.3 m/sec

A 3.0-kg crate rests at the bottom of a plane inclined at an angle of 15.0° above the horizontal. The crate is given a push up the plane and when it has travelled a distance of 2.0 m up the plane its speed is 3.0 m/s. How much work is done on the crate by gravity?

a. - 15 J
b. - 30 J
c. + 30 J
d. + 15 J



A student raises a 1-kg textbook 1 m off the surface of a table. How does the work done by gravity W_g on the book compare to the work done by the student W_S on the book?

a. $W_g > W_s$
b. Wg < Ws
c. Wg = Ws
d. None are correct.

Jack is holding a box that has a mass of m kg. He walks a distance of d m at a constant speed of v m/s. How much work, in joules, has Jack done on the box?

a) mgd b) $-mgd$ *c)* $12mv^2$ *d)* $-12mv^2$ e) zero

If negative work is being done by an object, which one of the following statements is true?

a) An object is moving in the negative x-direction.
b) An object has negative kinetic energy.
c) Energy is being transferred from an object.
d) Energy is being transferred to an object.

Person X pushes twice as hard against a stationary brick wall as person Y. Which one of the following statements is correct?

A) Both do positive work, but person X does four times the work of person Y.
B) Both do positive work, but person X does twice the work of person Y.
C) Both do the same amount of positive work.
D) Both do zero work.

Ahmed, pushed against a car that has stalled. While his friend Ziad stayed inside the car on the stirring wheel. Ahmed pushes the car for 4 minutes and does 200 Joules of work while moving the car 5 meters. They replaced their places and Ziad continues pushing for an additional 5 minutes, Find the work done by Ziad to move the car 8 m applying the same force

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Two cars are moving. The first car has twice the mass of the second car but only half as much kinetic energy. When both cars increase their speed by 5.00 m/s, they then have the same kinetic energy. Calculate the original speeds of the two cars.

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What is the kinetic energy of an ideal projectile of mass 20.1 kg at the apex (highest point) of its trajectory, if it was launched with an initial speed of 27.3 m/s and at an initial angle of 46.9° with respect to the horizontal?

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You throw a baseball straight up. Compare the sign of the work done by gravity while the ball goes up with the sign of the work done by gravity while it goes down.

A) The work is positive on the way up and positive on the way down.
B) The work is positive on the way up and negative on the way down.
C) The work is negative on the way up and positive on the way down.
D) The work is negative on the way up and on the way down because gravity is always downward.

A truck has four times the mass of a car and is moving with twice the speed of the car. If K_t and K_c refer to the kinetic energies of truck and car respectively, it is correct to say that

A) $K_t = 16K_c$.
B) $K_t = 4K_c$.
C) $K_t = 2K_c$.
D) $K_t = K_c$.

A crystal vase (mass = 2.40 kg) is dropped from a height of 1.30 m and falls to the floor, as shown in Figure. What is its kinetic energy just before impact? (Neglect air resistance for now.)

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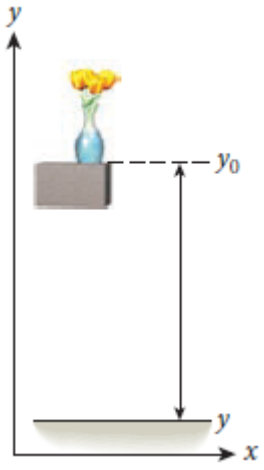
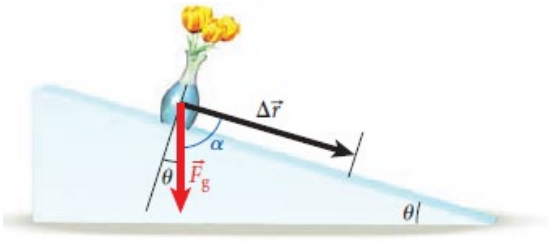


Which formula is used to find the mass of a vase in the following figure



A. $m = \dfrac{W_g}{g\ \cos\alpha}$

B. $m = W_g\ g\ \Delta r\ \cos\theta$

C. $m = \dfrac{W_g}{g\ \Delta r\ \cos\alpha}$

D. $m = \dfrac{W_g}{g\ \Delta r\ \cos\theta}$

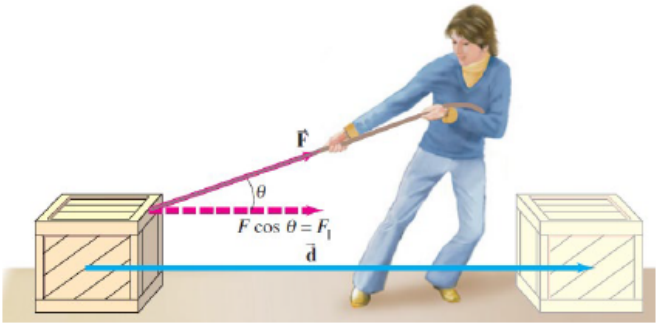
Three cars (car L, car M, and car N) are moving with the same speed and slam on their brakes. The most massive car is car L, and the least massive is car N. If the tires of all three cars have identical coefficients of kinetic friction with the road surface, for which car is the amount of work done by friction in stopping it the greatest?

A) The amount of work done by friction is the same for all cars.
B) Car L
C) Car M
D) Car N

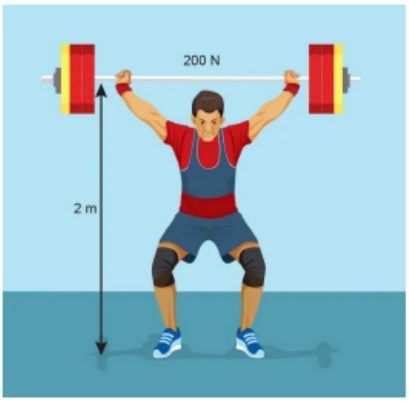
Two cars are moving. The first car has twice the mass of the second car, but only half as much kinetic energy. Then, both cars increase their speed by 8.00 m/s. They then have the same kinetic energy. The original speeds of the two cars are, respectively,

a. $v_1 = 5.66$ m/s, $v_2 = 11.3$ m/s.
b. $v_1 = 14.1$ m/s, $v_2 = 7.07$ m/s.
c. $v_1 = 11.3$ m/s, $v_2 = 5.66$ m/s.
d. $v_1 = 22.6$ m/s, $v_2 = 11.3$ m/s.

A person pulling a 5 kg crate along the floor. with a force F = 40 N making an angle 65° from the horizontal to move the box a distance d = 4.5m. if the friction force is 15 N. What will be the net work and final crate speed.



	Net work	Final Speed
A	76 J	5.51 m/s
B	8.4 J	1.85 m/s
C	67.5 J	5.19 m/s
D	55 J	5.51 m/s



weightlifter lifts a 200 N barbell from the floor to a height of 2 m. How much work is done?

a. 0 J
b. 100 J
c. 200 J
d. 400 J

A particle moves parallel to the *x*-axis. The net force on the particle increases with *x* according to the formula F_x = (120 N/m)*x*, where the force is in newtons when *x* is in meters. How much work does this force do on the particle as it moves from *x* = 0 to *x* = 0.50 m?

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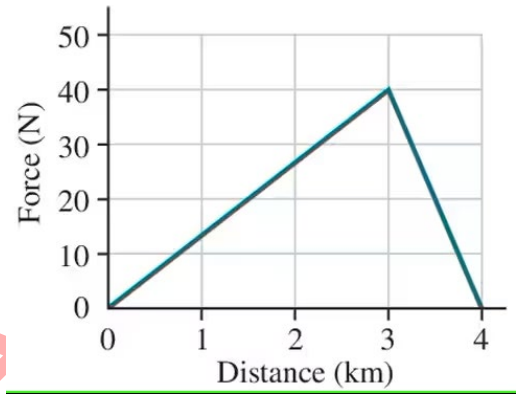
Find the total work done by the force shown in Fig as the object on which it acts moves (a) from x = 0 to to x = 3 Km



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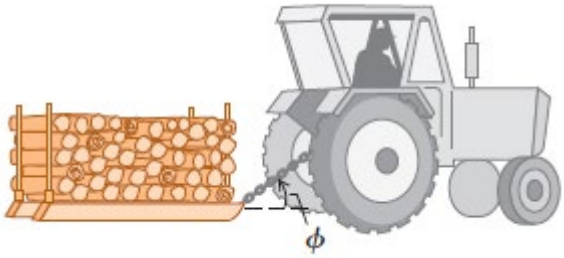
A farmer hitches her tractor to a sled loaded with firewood and pulls it a distance of 20 m along level ground. The total weight of sled and load is 14,700 N. The tractor exerts a constant 5000 N force at an angle of 36.9° above the horizontal. A 3500 N friction force opposes the sled's motion. Find

a- the work done by each force acting on the sled and

b- the total work done by all the forces.



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A variable force is given by $F(x) = Ax^6$, where $A = 11.45$ N/m^6. is force acts on an object of mass 2.735 kg that moves on a frictionless surface. Starting from rest, the object moves from $x = 1.093$ m to $x = 4.429$ m. How much does the kinetic energy of the object change?

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Water skiers often ride to one side of the center line of a boat, as shown. In this case, the ski boat is traveling at 12 m/s and the tension in the rope is 91 N. If the boat does 3800 J of work on the skier in 50.0 m, what is the angle θ between the tow rope and the center line of the boat?

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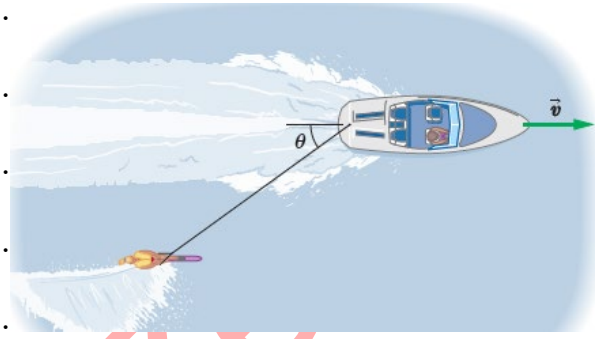

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