أوراق عمل وحدة Dimension One in Forces منهج انسباير

تم تحميل هذا الملف من موقع المناهج الإماراتية	
موقع المناهج ⇦ المناهج الإماراتية ⇦ الصف التاسع العام ⇦ علوم ⇦ الفصل الثاني ⇦ ملفات متنوعة ⇦ الملف	
تاريخ إضافة الملف على موقع المناهج: 2026-02-05 12:31:11	
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	المزيد من مادة علوم:
إعداد: عبد الرحمن عصام	

التواصل الاجتماعي بحسب الصف التاسع العام					
صفحة المناهج الإماراتية على فيسبوك					
المواد على تلغرام	التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات	

المزيد من الملفات بحسب الصف التاسع العام والمادة علوم في الفصل الثاني	
مذكرة شاملة وحدات الفصل منهج بريدج	1
حل تجميعة مراجعة وفق الهيكل الوزاري منهج بريدج	2
مذكرة مراجعة وفق الهيكل الوزاري منهج انسباير	3
حل أسئلة امتحان نهائي سابق	4
مراجعة عامة للامتحان باللغتين العربية والانجليزية	5

اينشتاين

Force in one dimension

مع خالص الدعاء بالتوفيق والنجاح

أ/ عبدالرحمن عصام

0509886279

❖ Force in one dimension

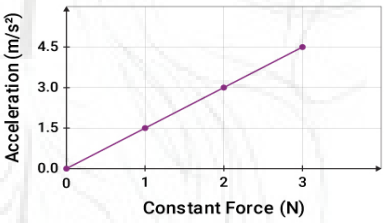
1. Which law states that the acceleration of an object is proportional to the net force and inversely proportional to the mass of the object being accelerated?

ⓐ Newton 's second law ⓑ Newton's Third law
ⓒ Newton's first law ⓓ Law of inertia

2. A skydiver of weight 700 N falls with the terminal speed after opening his parachute. What is the drag force acting on the skydiver?

ⓐ Zero N ⓑ 1400 N Up ⓒ 700 N Down ⓓ 700 N Up

3. The graph shows the relationship between the force (F) acting on a cart and its acceleration (a). What is the mass of the cart (m)?



ⓐ 1.5 kg ⓑ 4.0 kg
ⓒ 0.67 kg ⓓ 0.5 kg

4. A net force of 4000 N is acting on a car with a mass of 1600 kg. What is the acceleration of the car?

ⓐ 2.5 m/s^2 ⓑ 1.2 m/s^2 ⓒ 6.4 m/s^2 ⓓ 0.4 m/s^2

5. What is the cause of all accelerations?

ⓐ Normal force ⓑ Unbalanced forces
ⓒ Friction forces ⓓ Balanced forces

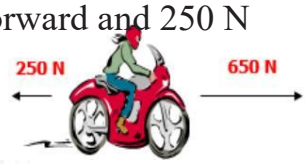
6. Which of the following is a field force?

ⓐ Normal force ⓑ Gravitational force
ⓒ Friction forces ⓓ Tension force

7. A net force of 30.0 N accelerates a block at 6.0 m/s^2. What is the mass of the block?

ⓐ 180 kg ⓑ 5.0 kg ⓒ 0.2 kg ⓓ 3.0 kg

8. The figure shows two forces acting on a motorbike, 650 N Forward and 250 N backward What is the net force acting on the motorbike?

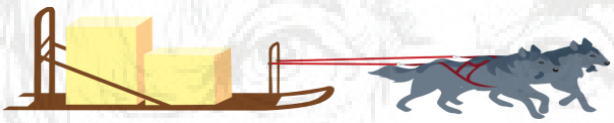


ⓐ 900N backward ⓑ 900 N forward ⓒ 400 N backward ⓓ 400 N forward

9. What is the weight of a mass 15 kg box?

ⓐ 24.8 N ⓑ 0.65 N ⓒ 1.53 N ⓓ 147 N

10. dogs are pulling sleds carrying food packages- One dog pulls with a force of 40N and the other pulls a force of 60N as shown in the figure- The total mass of the sled and the packages is 50 kg
What is the acceleration of the sled and the packages



ⓐ 0.4 m/s^2 ⓑ 1.2 m/s^2 ⓒ 0.5 m/s^2 ⓓ 2.0 m/s^2

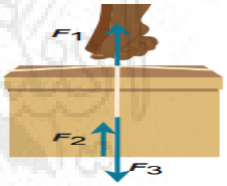
11. Which of the following is not true about weightlessness?

ⓐ The weight actually equals zero ⓑ The scale reading is Zero
ⓒ The apparent weight equals Zero ⓓ Contact forces on the object equal Zero

12. If the net force acting on an object is decreased, what happens to its acceleration?

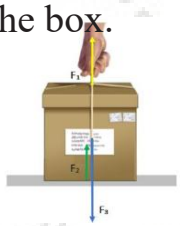
ⓐ It decreases ⓑ It doesn't change
ⓒ It increases ⓓ It might increase or decrease

13. The figure shows a box at rest on a table- There are three forces acting on the box, but it is not moving- Which one is the normal force



ⓐ F2 ⓑ F1&F3
ⓒ F1 ⓓ F3

The figure shows a box at the rest on a table. There are forces acting on the box. Which of the following is true for the Vectors of these forces?



ⓐ $F_2+F_3=-F_1$ ⓑ $F_1=F_2=F_3$ ⓒ $F_1+F_2=-F_3$ ⓓ $F_1+F_3=-F_2$

14. 5kg bucket of water is pulled up using a rope. The bucket is moving with constant velocity. What is the tension in the rope?

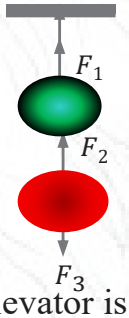
ⓐ 5N ⓑ 2.5 N ⓒ 24.5 N ⓓ 49 N

15. The figure shows a ball interacts with a table and with Earth- According to Newton's third law, which of the following is an interaction pair?

ⓐ F Earth's mass on ball, F ball on Earth's mass ⓑ F table on ball, F Table on Earth's mass

ⓒ F Earth's mass on ball, F Earth's mass on table ⓓ F ball on table, F Earth's mass on table

16. In the figure, which of the forces (F1, F2, F3) are field force?



ⓐ F2 ⓑ F1&F3

ⓒ F1 ⓓ F3

17. A man with weight 650 N is standing on a scale in an elevator- The elevator is going up with a constant speed.
Which of the following is a correct reading of the scale?

ⓐ Zero ⓑ 730 N ⓒ 520 N ⓓ 650 N

18. A mass of (31.0 kg) on a weight scale in an elevator floor. What is the reading recorded by the scale when the elevator moves with an acceleration (3.00 m/s^2) upward?

ⓐ 211N ⓑ 304 N ⓒ 0 397 N ⓓ 93.0 N

19. A mass of (15 kg) on a weight scale in an elevator floor. is the reading recorded by the scale when the elevator moves with an acceleration (1.9 m/s^2)

ⓐ 180 N ⓑ 150 N ⓒ 120 N ⓓ 28N

20. Which of the following is true for an interaction pair depending on Newton's third law?

ⓐ exerted in the same time ⓑ are different in magnitude

ⓒ in the same direction ⓓ exerted on the same object

21. Which of the following is not true for an interaction pair depending on Newton's third law?

ⓐ exerted in the same time ⓑ are equal in magnitude
ⓒ in the opposite direction ⓓ act on the same object

22. Newton's first law of motion can sometimes be expressed as "the tendency of an object to resist changes in velocity". This is why it is called the law

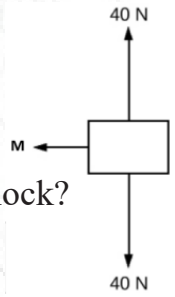
ⓐ Instantaneous acceleration ⓑ inertia
ⓒ acceleration ⓓ equilibrium

23. horizontal forces are exerted on a large crate of mass 160 kg. The first force is (Fl= 417 N) to the right- The second force is (F2= 273 N) to the left.

What is the magnitude of the acceleration of the box?

ⓐ 2.60 m/s^2 ⓑ 2.10 m/s^2 ⓒ 0.90 m/s^2 ⓓ 1.70 m/s^2

24. The figure shows the forces exerted on a 1.5 kg block that is sliding on a horizontal surface, If the force M is 10 N, what is the acceleration of the block?

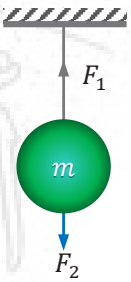


ⓐ 15 m/s^2 ⓑ 6.67 m/s^2 ⓒ 0 m/s^2 ⓓ -6.67 m/s^2

25. What is the external net force on an object falling towards the ground with a constant velocity from a certain height?

ⓐ The net force is downward with magnitude mg. ⓑ The net force is zero
ⓒ The net force is upward with magnitude mg ⓓ The net force is downward with magnitude 9.8 N

26. Which of the following is true for Fl and F2 in the figure?



ⓐ Fl and F2 field forces ⓑ Fl field force and F2 contact force
ⓒ Fl and F2 contact forces ⓓ F2 field force and Fl contact force

27. An object is in_____if its velocity isn't changing.

ⓐ deceleration ⓑ acceleration ⓒ equilibrium ⓓ free fall

28. The normal force is always

ⓐ is a scalar quantity. ⓑ equals Egin magnitude.
ⓒ acts perpendicular to the surface. ⓓ points vertically upward.

29. Which of the following does NOT represent Newton's second law?

ⓐ a = Fnet/m ⓑ Fnet =ma ⓒ m = Fnet/a ⓓ a = m/ Fnet

30. Which of the following situations can be explained by Newton's third law?

ⓐWhen a man fires a gun, the gun recoils

ⓑWhen the force acting on an object is doubled its acceleration is doubted

ⓒTwo objects of different masses released from the same height at the same time hit the ground at the same moment

ⓓA feather falling in a straight line with a constant speed

31. is an expression of $F_{ab} = -F_{ba}$

ⓐ Newton's first law ⓑ Newton's third law

ⓒ Newton's second law ⓓ Fig Newton's law

32. Which of the following is NOT true?

ⓐ The net force on an object is equal to the mass of the object multiplied by the acceleration.

ⓑ An object moving at constant velocity always has a net force acting on it.

ⓒ The net force exerted on an object is related in a linear to the acceleration of the object.

ⓓ An object moving with constant acceleration always has a net force acting on it.

33. Which of the following system of forces provides the block the highest net force?

(Note: vectors not drawn to scale.)

ⓐ 

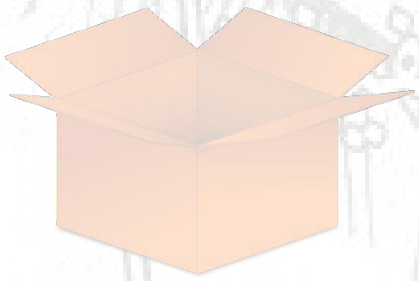
ⓑ 

ⓒ 

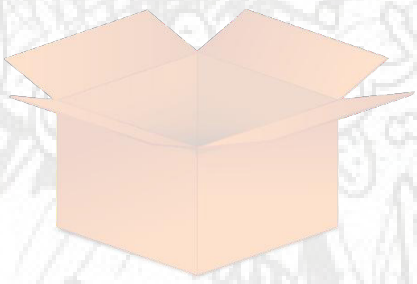
ⓓ 

34. Classify each of the following as either contact force, a field force or not a force.

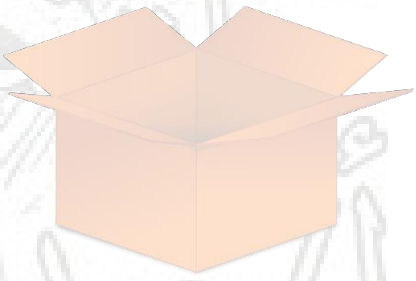
Mass- inertia - the push of a door- friction-air resistance- spring force -gravity magnets repulsion -tension -acceleration



Contact force



Field force



Not a force

35. In Abu Dhabi, a team of engineers is designing a hyperloop pod for a high- speed transportation project. The pod, with a mass of 1200 kg, is intended to accelerate from rest to 525 m/s in a short span of 15 seconds.

a. Calculate the net force required to accelerate the hyperloop pod to the specified speed.

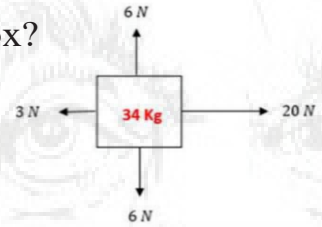
.....
.....
.....

b. Find the distance the pod travels during the given time interval.

.....
.....

36. The free body diagram shows the forces acting on a box with a mass of 34 Kg.

What is the acceleration of the box?



.....
.....
.....
.....
.....

37. Two forces act on a wooden box with a mass of (30 Kg) If Fa (85.7N) due east, and Fb (70.7 N) due west).

A. Calculate the net force acting on the box.
B. Calculate the acceleration of the box.

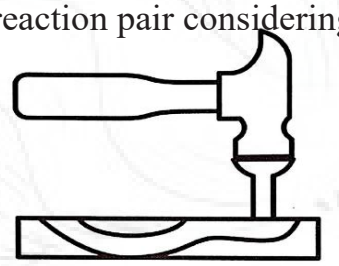
.....
.....
.....
.....
.....

38. An elevator is moving down with an acceleration of (4.0 m/s^2).

Calculate the apparent weight of a (70kg) man in the elevator.

.....
.....
.....
.....
.....

39. Salman is working on assembling a wooden bookshelf. He uses a hammer to drive a nail into a wooden plank, ensuring the pieces are securely joined.
    a. Draw and label the action-reaction pair considering the forces involved when the hammer hits the nail.



    b. If you know that the mass of the hummer is 5 Kg and the mass of the nail is 0.01 Kg, Explain your answer.
    What is the magnitude Of F hummer on nail if F nail on hummer is 50 N?

.....
.....
.....

40. The ball shown in the figure has a mass of 0.3 kg. and the Earth's mass is $6.0 \times 10^{24}\ kg$.

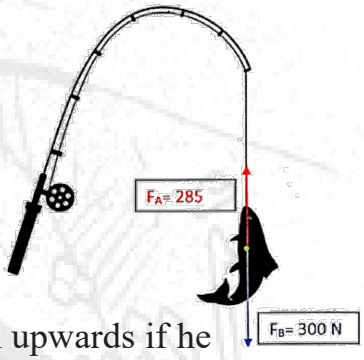
    a. What is the gravitational force on Earth due to the ball?

.....
.....
.....

    b. What is Earth's acceleration as a result of this force?

.....
.....
.....

41. Muna is sitting at a local fishing spot, witnessing a Tuna fish that has already been hooked and is being pulled using a fishing rod. The forces acting on the fish are represented through the figure below.



    a. Examine the acting forces, what does each force represent?
    FA is the_____force.
    FB is the_____ force.

    b. Muna assumed that the fisherman will succeed in pulling the fish upwards if he maintains the same applied force, will you agree with Muna? Explain your answer.

.....
.....

c. What is the mass of the fish?

.....
.....

42. The car in the image below is tested at a safety traffic laboratory. This is done by steering the car by a dummy to collide with a solid barrier at high speeds.
the action-reaction pair for the forces between the car and draw and label the barrier.

At the point of collision, the car exerts a force of 10000 N on the barrier.

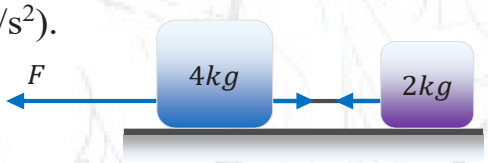
b. What is the magnitude of the force exerted by the barrier on the car? Explain your answer.

.....

.....

43. In the figure, two blocks are placed on a smooth horizontal surface and are connected by a string. When force F is applied as shown in the figure, the two blocks move with constant acceleration (1.5 m/s^2).

Calculate the magnitude of force F



.....

.....

.....

.....

.....

44. The blocks shown below are placed on a smooth horizontal surface and connected by a piece of string. According to the figure calculate the tension force in the string?

.....

.....

.....

.....

.....

45. The blocks shown below are placed on a smooth horizontal surface and connected by a piece of string. If (18 N) force is applied to the (5.0 kg) block calculate the tension (F) in the string.

.....

.....

.....

.....

.....