PHYSICS

BOOKS - PEARSON IIT JEE FOUNDATION

FORCE AND PRESSURE

Master Your Test Solved Example

1. Define speed of the object.

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2. Explain why an object slows down or go faster, or change its direction of motion.

3. What do you do to make football move faster?

4. What do you understand by force?

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5. A magnet attracts a piece of iron towards it.

Explain is attraction also a pull?

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6. What is repulsion? Is it a pull or a push?

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7. What happens when a force is applied in the direction opposite to the motion of an object?

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8. What happens when a cricket ball is hit by the batsman?

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9. What happens when we push a moving swing in the direction of its motion?

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10. What happens when you press a rubber ball placed on a table?

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11. What happens when you apply a force on an inflated balloon by pressing it between your palms?

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12. Explain why muscular force is categorized as a contact force.

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13. When we push an object like a school bag or lift a bucket of water, where does the force come from?

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14. Why does a boat come to rest if we stop rowing it?

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15. Explain why a moving bicycle gradually stops when we stop pedaling.

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16. Force of friction always act. Explain.

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17. Explain why, frictional force is said to be a contact force.

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18. Does the magnet on the rollers begin to move when the other magnet is brought near to it?

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19. Why sometimes an object does not move even after applying the force?

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20. When we throw a ball up, it moves up for a while, slows down and then starts fall Why does this happen?

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21. Explain why the planets in our solar system revolve around the Sun in their orbits.

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22. When a comb is rubbed on dry hair and then brought close to small bits of paper, it attracts the bits of paper towards itself. Explain why?

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23. Explain why electrostatic force is categorized as non-contact force.

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24. Explain why water begins to flow towards the ground as soon as we open a tap.

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25. What do you understand by resultant force or net force?

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26. What happens when two forces act in opposite direction?

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27. Explain what happens when two opposite forces of equal magnitudes act on a body.

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28. What is a balanced and unbalanced force?

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29. What is the result of unbalanced forces?

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30. When the net force is zero, the forces on an object are

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31. State true (T) or false (F).

A force is a push or a pull.

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32. State true (T) or false (F).

Force can stop moving objects, but it cannot move stationary objects.

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33. State true (T) or false (F).

Balanced forces are forces acting on a body that make it move in a straight line

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34. State true (T) or false (F).

When two unequal forces are applied on a body from opposite directions, the body moves in the direction of greater force.

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35. Is there any relation between pressure and force?

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36. What happens to pressure if area increases?

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37. Discuss two factors on which pressure is dependent.

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38. Explain why shoulder bags are provided with broad straps and not thin strap.

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39. Explain why tools meant for cutting and piercing always have sharp edges.

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40. Explain why, porters place a thick round piece of cloth on their heads when they have to carry heavy loads.

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41. Do liquids and gases also exert pressure? Comment.

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42. What do you understand by atmospheric pressure?

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43. Explain why we sometimes feel light-headed when we go to hill stations.

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44. Name the instrument used to measure liquid pressure.

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45. How is pressure related to force and area ?

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46. Mention any two properties of liquid pressure.

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47. Calculate the pressure exerted by the four feet of a chair on the ground if the area of contact of one leg of the chair is $0.1m^2$ and

the chair and a person sitting on it together exert a force of 500 N on the ground.

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48. Calculate the area of contact between a box and the ground if the box weighs 300 N and exerts a pressure of 7500 Pa on the ground.

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Track Your Learning I

1. The standard unit in which force is measured is _____

A. Dalton

B. Hertz

C. Pascal

D. Newton

Answer: D

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2. A force is made up of two quantities—a magnitude and a _____

A. speed

B. vector

C. height

D. direction

Answer: D

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3. The _____ of a force is a numerical value that tells us the extent of the force.

A. magnitude

B. direction

C. speed

D. None of them

Answer: A

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4. Two bodies must interact with each other in order to be able to exert a .....on one another.

A. force

B. pressure

C. speed

D. collision

Answer: A

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5. Force can change the _____ of an object.

A. speed

B. direction

C. magnitude

D. All of them

Answer: D

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Track Your Learning Ii

1. When an object is at the state of rest, it is considered to be in the state of____speed.

A. higher

B. lower

C. zero

D. None

Answer: C

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2. A force that is exerted by the muscles present in the body of a living organism is called _____

A. muscular force

B. gravitational force

C. electrostatic force

D. nuclear forces

Answer: A

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3. Muscular force is also called _____ force.

A. non-contact force

B. contact force

C. magnetic force

D. gravitational force

Answer: B

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4. _____ is the reason why we find it hard to move a large carton on a floor.

A. Gravitational force

B. Frictional force

C. Electrostatic force

D. Muscular force

Answer: B

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5. _____ is a force that exists between any two objects in the universe.

A. Frictional force

B. Electrostatic force

C. Muscular force

D. Gravitational force

Answer: A

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6. Mass is a constant quantity for a given body and is measured in

A. Litres or millilitre

B. kilograms (kg) or grams

C. Kgf or gf

D. Pascal

Answer: B

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7. The Moon (which is lighter than the Earth) exerts a gravitational force on objects as compared to the Earth.

A. lesser

B. greater

C. equal

D. None of these

Answer: A

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8. The force exerted by a charged object on objects around it is called

A. muscular force

B. gravitational force

C. electrostatic force

D. frictional force

Answer: D

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9. When _____ acts between two charged objects, it can be both attractive and repulsive.

A. electrostatic force

B. muscular force

C. gravitational force

D. force of gravity

Answer: A

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10. _____ is used in several applications in daily life, such as in refrigerator doors, in magnetic compasses and to separate waste materials.

A. Electrostatic force

B. Muscular force

C. Gravitational force

D. Magnetic force

Answer: D

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11. A force acting in the opposite direction of an object in motion

A. Gravitational

B. Buoyant

C. Frictional

D. Muscular

Answer: C

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12. What is the unit of force ?

A. Kilogram

B. Meter

C. Pascal

D. Newton

Answer: D

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Track Your Learning Iii

1. The sum of all forces acting on an object and direction

A. Contact Force

B. Balanced Force

C. Unbalanced Force

D. Net Force

Answer: D

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2. Why does a book on a table not move?

A. No forces are acting on the book

B. Gravity is the only force acting on the book

C. Forces of the table pushing up and gravity pulling down are balanced

D. All of these

Answer: C

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3. What will cause an object to move?

A. Applied forces

B. Balanced forces

C. Unbalanced forces

D. Gravitational forces

Answer: C

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4. How will this object move?

A. It will not move.

B. It will move to the right.

C. It will move to the left.

D.

Answer: B

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5. What is the net force?

A. 10 N

B. 0 N

C. 25 N

D. 1 N

Answer: B

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6. Which of these depicts a pair of balanced forces?

A. A force of 5 N acting on a body to the right and a force of 10 N acting on it the left.

B. A force of 5 N acting on a body to the right and a force of 10 N acting on it to the right.

C. A force of 10 N acting on a body to the left and a force of 10 N acting on it to the right.

D. A force of 10 N acting on a body to the left and a force of 10 N acting on it to the left.

Answer: C

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Track Your Learning Iv

1. Atmospheric pressure is measured using a device called a _____

A. barometer

B. spherometer

C. hygrometer

D. None of these

Answer: A

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2. _____ is defined as the force exerted per unit area of a surface by air.

A. Force of gravity

B. Force

C. Atmospheric pressure

D. Muscular force

Answer: C

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3. The standard unit of measuring pressure is

A. Dalton

B. Pascal

C. Hertz

D. Newton

Answer: B

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4. The impact of force on a body depends on the amount of force that acts on a unit of a surface.

A. pressure

B. force

C. area

D. density

Answer: C

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5. _____ is measured using an instrument called a U-tube manometer.

A. Liquid pressure

B. Atmospheric pressure

C. Gravitational force

D. Force

Answer: A

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Hots Higher Order Thinking Skills

1. How can we decide whether an object is moving faster than the other?

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2. Why do we use knife to cut fruits ?

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3. What happens when two forces act in opposite direction?

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4. A ball is in rest. When it is pushed, why it starts moving?

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5. Why do the school bags have broad shoulder straps?

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6. Two constant forces 4 N and 5 N act on a body in opposite directions. Find the resultant force on the body.

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7. When a man swims under water, he feels a pain on his eardrums. Why?

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8. We observe that the wheels of buses and trucks are heavier than the wheels of car or scooter. Why?

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9. How can we change the speed and the direction of a moving body?

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10. A piece of wood is floating in water kept in a bottle. The bottle is connected to an air pump. Neglect the compressibility of water. When more air is pushed into the bottle from the pump, the piece of wood will float with:

A. larger part in the water

B. lesser part in the water

C. same part in the water

D. will sink to the bottom

Answer:

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Classroom Corner A Very Short Answer Type Questions Multiple Choice Questions

1. Which of these forces mandatorily requires a physical contact between two bodies?

A. Magnetic force

B. Muscular force

C. Electrostatic force

D. Gravitational force

Answer: B

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2. The standard unit of measuring pressure is

A. N/m^2

B. Pa

C. kgf

D. N/kgf

Answer: B

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3. Which of the following sentences is true for frictional force?

A. Frictional force brings a ball down when we throw it up in air.

B. Frictional force helps to change the direction of moving objects.

C. Frictional force always opposes motion.

D. Frictional force is sometimes attractive and sometimes repulsive.

Answer: C

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4. Which of these components of an atom has a negative charge?

A. Nucleus

B. Neutron

C. Proton

D. Electron

Answer: D

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5. What is force?

A. pull

B. push

C. push and push both

D. none of these

Answer: C

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6. What do you mean by state of motion of a body.

A. position of rest

B. position of motion

C. both by the state of rest or motion

D. none of these

Answer: C

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7. The strength of force is expressed by?

A. weight

B. mass

C. magnitude

D. longitudinal force

Answer: C

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8. The force between two charged bodies is called

A. muscular force

B. gravitational force

C. magnetic force

D. electrostatic force

Answer: D

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9. What will be the resultant force when two forces act in opposite directions on an object?

A. sum of two factors

B. difference between two factors

C. both of these

D. none of these

Answer: B

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10. Magnetic force is a

A. contact force

B. non-contact force

C. both (a) and (b)

D. none of these

Answer: B

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11. Force acts on an object may change

A. direction

B. shape

C. speed

D. all of above

Answer: D

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12. Leaves or fruits fall on the ground due to

A. magnetic force

B. gravitational force

C. electrostatic force

D. muscular force

Answer: B

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13. When we press the bulb of a dropper with its nozzle kept in water, air in the dropper is seen to escape in the form of bubbles. Once we release the pressure on the bulb, water gets filled in the dropper. The rise of water in the dropper is due to :

A. Pressure of water.

B. Gravity of the earth

C. Shape of rubber bulb

D. Atmospheric pressure.

Answer: D

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14. A _____ is a push or a pull on an object.

A. chemical

B. force

C. magnet

D. gravity

Answer: B

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15. How will this object move?

A. It will not move.

B. It will move to the right

C. It will move to the left

D. It will move up

Answer: B

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16. What is the net force of an object that is not moving?

A. 0 N

B. 100 N

C. Upward force

D. Downward force

Answer: A

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17. The sum of all forces acting on an object and direction

A. Contact Force

B. Balanced Force

C. Unbalanced Force

D. Net Force

Answer: D

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18. A force acting in the opposite direction of an object in motion

A. gravity

B. buoyant

C. friction

D. normal

Answer: C

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19. When a pair of balanced forces acts on a body, the _____ force acting on it becomes zero.

A. gravitational force

B. resultant force

C. electrostatic force

D. contact force

Answer: B

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20. Each proton present in an atom possesses 1 unit of _____.

A. negative charge

B. neutral

C. positive charge

D. 10 electrons

Answer: C

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Classroom Corner A Very Short Answer Type Questions Subjective Type Questions

1. Ayesha is watering the plants in her garden with a pipe of area of cross-section 'A' and observed that the force of water from the pipe is 'F'. Find the change in area of cross section

of the pipe to attain a pressure difference which is 1.5 times that of the initial.

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2. Several actions we perform in day-to-day life involve a push, a pull or both a push and a pull. Complete the table given below with any two examples of actions that involve (a) a

push, (b) a pull and (c) both a push and a pull.

(a) Actions involving a push	(b) Actions involving a pull	(c) Actions involving both a push and a pull
• Pressing a button on a remote control • _____ _____ • _____ _____	• Opening a door by pulling the door knob • _____ _____ • _____ _____	• Squeezing a cloth by twisting it from both sides • _____ _____ • _____ _____

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3. Do you think electrostatic and magnetic forces are similar in any way? Explain your answer.

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4. A blacksmith hammers a hot piece of iron while making a tool. How does the force due to hammering affect the piece of iron?

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5. An inflated balloon was pressed against a wall after it has been rubbed with a piece of synthetic cloth. It was found that the balloon sticks to the wall. What force might be

responsible for the attraction between the balloon and the wall?

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6. A rocket has been fired upwards to launch a satellite in its orbit. Name the two forces acting on the rocket immediately after leaving the launching pad.

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7. How much force is needed to accelerate a 1000 kg car at a rate of $3\frac{m}{s^2}$?

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8. Does it mean that the net force on an object is zero if the two forces acting on it in opposite directions are equal?

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9. What happens to the shape of a ball of dough when it is rolled to make a chapati?

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10. The atmosphere exerts a tremendous amount of pressure on everything on the Earth, includ ing us. Explain why we are not crushed under this weight?

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11. Why a balloon that rises far up in the sky eventually bursts?

Watch Video Solution

12. Why does the thickness of the wall of a dam gradually increase with the depth of water?

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Classroom Corner A Very Short Answer Type Questions Assertion Reason Type Questions

1. Assertion : The gravitational force makes the earth move around the sun and also makes the moon go around the earth.

Reason : Every objects in the universe exert a force on other objects.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: B

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2. Assertion : When we bring a magnet close to a pin lying on a smooth table, the pin starts moving (sliding) towards the magnet.

Reason : Magnetic force is a contact force.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: D

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3. Assertion: We can live very happily if friction is not present in nature.

Reason: Aeroplane shape is streamlined to reduce the effort of frictional force.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

Answer: B

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Classroom Corner B Short Answer Type Questions

1. Explain the below points:

Resultant force

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2. Explain the below points:

U-tube manometer

Watch Video Solution

3. Explain the below points:

Pressure

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4. Monika and Parul each have an inflated balloon in their hands. Monika pressed the tip of a sharpened pencil into her balloon, whereas Parul pressed the balloon with her hands.

(a) If both Monika and Parul applied the same amount of force on the balloon, which balloon would burst first?

(b) Give a reason for your answer.

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5. List any two real-life situations in which pressure plays a role.

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6. State any three effects of force on an object.

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7. Why does a person weigh lesser on the Moon than he does on Earth?

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8. Name the force acting on a plastic bucket containing water held above ground level in

your hand. Discuss why the forces acting on the bucket do not bring a change in its state of motion.

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9. Define the following terms.

Frictional force

Watch Video Solution

10. Define the following terms.

Weight

11. Define the following terms.

Non-contact force

12. What happens to the speed of a body when force is applied?

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13. Explain why is force directly proportional to the acceleration.

Watch Video Solution

14. Why does liquid pressure increase with depth?

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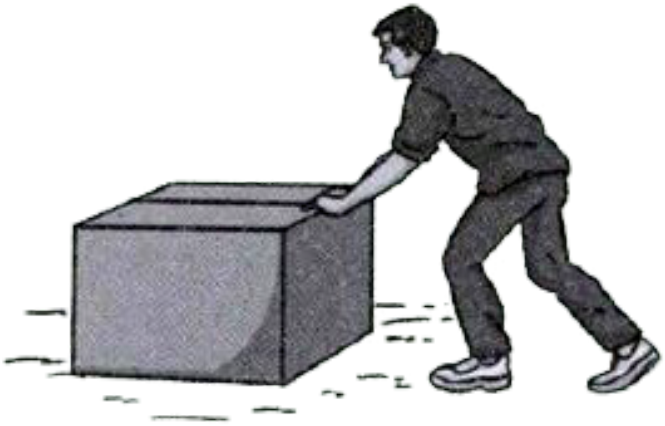
15. Mayank is trying to push a heavy box kept on a floor. What are the different kinds of forces that must be acting on the box in this

situation?



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16. Why do people sometimes have a bleeding nose while travelling on an airplane?

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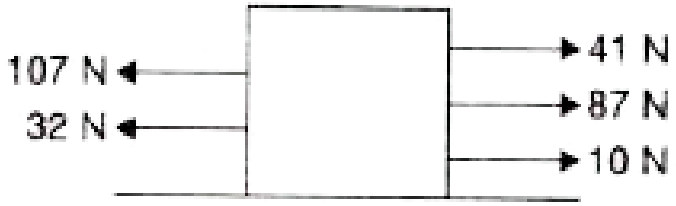
17. Calculate the magnitude and the direction of the resultant force acting on an object shown in the picture.



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18. Explain why Moon exerts a lesser gravitational force on objects as compared to the Earth.

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19. When a coin begins to move downwards, it is clear that the state of motion of the coin under goes a change. Answer the below points:

(a) Can this happen without any force acting on it?

(b) Which is this force?

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20. What is the cause of change in motion or change in the state of motion?

21. An archer stretches her bow while taking aim at the target. She then releases the arrow, which begins to move towards the target. Based on this information fill up the gaps in the state ments using the following terms. Muscular, contact, non-contact, gravity, friction, shape, attraction

(a) To stretch the bow, the archer applies a force that causes a change in its _____.

(b) The force applied by the archer to stretch the bow is an example of ____ force.

(c) The type of force responsible for a change in the state of motion of the arrow is example of a _____ force.

(d) While the arrow moves towards its target, the forces acting on it are due to ____ and that due to _____ of air.

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22. Identify the agent exerting force and the object on which it acts when a piece of lemon is squeezed between fingers and juice come out.

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23. How to describe state of motion? Answer in your own words.

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24. How a force can change the state of motion?

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Classroom Corner C Long Answer Type Questions

1. Frictional force always tries to balance the force applied on a body. Do you think this statement is true? Give reasons for your answer.

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2. A girl is trying to push a sofa kept on a floor. The floor exerts a frictional force of 35 N on the sofa towards the left. However, despite the fric tional force acting on the sofa, the girl was able to move it. What can you say about the magni tude of the force exerted by the girl? In which direction must she have moved the sofa?

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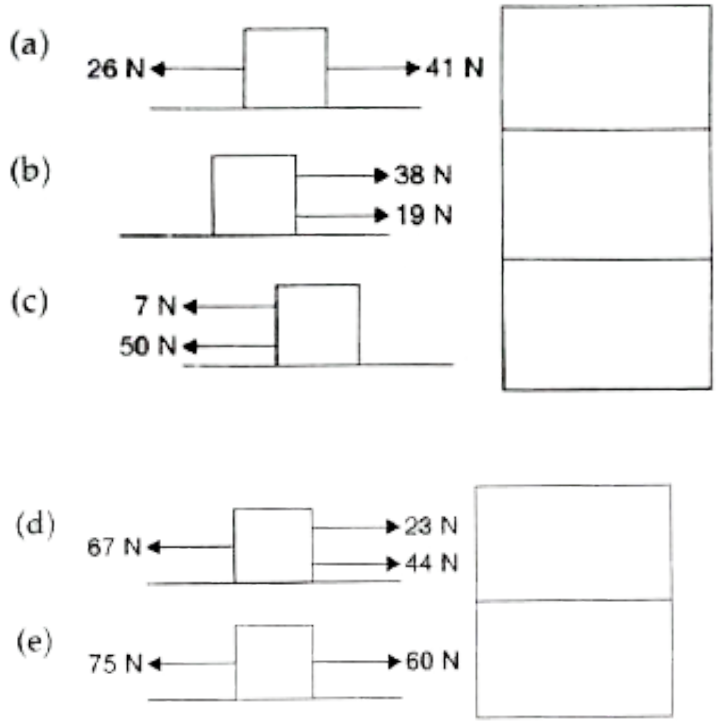
3. Answer the following questions. For each of the cases given below, draw a dia gram on the box given on the right showing the direction and magnitude of the resultant force that would act on the box.



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4. Describe what kind of resultant force will be acting on a body when two forces of unequal magnitudes act on it in opposite directions?

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5. Explain how objects acquire positive or negative charges.

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6. Explain how atmospheric pressure helps us suck liquids through straws?

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7. Give one example from daily life showing the action of each of these kinds of forces.

(a) Gravitational force

(b) Muscular force

(c) Magnetic force

(d) Frictional force

(e) Electrostatic force

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8. Why do school bags and back packs have broad shoulder straps? Why is it advised to carry school bags on both shoulders instead of one shoulder?

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9. Many magicians and entertainers use a "Bed of Nails' to trick their spectators. The bed of nails is made of a large wooden base on which a large number of nails are fixed, with their pointed ends pointing outwards. Magicians and entertainers lie down on the bed and sur prise spectators by the fact that the nails do not hurt them. Let us find out why this hap pens by calculating the pressure exerted by a person lying on these nails. A person weighing 70 kgf (where 1 kgf = 9.8 N) is lying on a bed of nails made of a 1000 nails. If the surface area

of 1 nail is $0.001m^2$, calculate:

(a) The pressure that would be exerted by one nail on the body of the person.

(b) The pressure exerted by 1000 nails on the body of the person.

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10. A gas exerts pressure on the wall of the container. Assign reason.

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11. Explain the below points:

What happens when pressure is applied to a liquid?

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12. Explain why we are able to suck liquids through straws and fill liquids in injections and droppers?

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13. Are pressure and force directly proportional? Explain in your own words.

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14. State the effect of force depicted in each of the following pictures.

(a)		Force can _____ _____ _____	(c)		Force can _____ _____ _____
(b)		Force can _____ _____ _____	(d)		Force can _____ _____ _____

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Competition Corner

1. What do you mean by atmospheric pressure?

A. Pressure exerted by air on living and non-living things

B. Pressure exerted by different gases on each other

C. Pressure exerted below the surface of water

D. Pressure exerted above the atmosphere

Answer: A

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2. Which of these is NOT a part of U-tube manometer?

A. U-shaped glass tube

B. Rubber tube

C. Steel bowl

D. Funnel

Answer: C

View Text Solution

3. What is U-tube manometer used for?

A. To measure force applied by liquids direction?

B. To measure density of liquids

C. To measure liquid pressure

D. To measure liquid volume

Answer: C

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4. What is the standard unit of measurement of pressure?

A. Hertz

B. Watts

C. Pascal

D. Newton

Answer: C

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5. Which feature in camels allows them to walk easily on sand?

A. Long legs

B. Hairy feet

C. Broad feet

D. Sharp claws

Answer: C

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6. What will be the net force if two forces of 20N and 10 N are acting on a body in opposite directions?

A. 10 N

B. 25 N

C. 30 N

D. 35 N

Answer: A

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7. What is the net force on a body during a balanced force?

A. Hundred

B. Zero

C. One

D. Ten

Answer: B

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8. What will be the net force if two 10 N are acting on a body towards the same direction?

A. 0 N

B. 5 N

C. 10 N

D. 20 N

Answer: D

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9. What do you call the combined force of two or more forces acting on a body?

A. Complex force

B. Resultant force

C. Directional force

D. Compound force

Answer: B

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10. What are the two quantities of force?

A. Quantity and volume

B. Direction and volume

C. Magnitude and quantity

D. Direction and magnitude

Answer: D

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11. What happens to the speed of a moving car when force is applied in the opposite

A. It increases

B. It decreases

C. It remains as it is

D. It increases first and then decreases.

Answer: B

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12. What is the magnitude of 100 N force?

A. 10

B. 25

C. 50

D. 100

Answer: D

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13. What is the unit of measurement of force?

A. Celsius

B. Newton

C. Watt

D. Hertz

Answer: B

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14. Which of these depicts a pair of balanced forces?

A. A force of 5 N acting on a body to the right and a force of 10 N acting on it to the right.

B. A force of 5 N acting on a body to the right and a force of 10 N acting on it to the left.

C. A force of 10 N acting on a body to the left and a force of 10 N acting on it to the right.

D. None of these

Answer: C

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15. Which of these components of an atom has a positive charge?

A. Electron

B. Neutron

C. Nucleus

D. Proton

Answer: D

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16. Which sentence is true for frictional force?

A. Frictional force always opposes motion.

B. Frictional force brings a ball down when we throw it up in air.

C. Frictional force helps to change the direction of moving objects.

D. Frictional force is sometimes attractive and sometimes repulsive.

Answer: A

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17. The standard unit of pressure among the following is _____

A. Pa

B. kgf

C. N/m^2

D. N/kgf

Answer: A

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18. A force which requires a physical contact between two bodies among the following is

A. Muscular force

B. Magnetic force

C. Electrostatic force

D. Gravitational force

Answer: A

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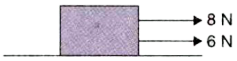
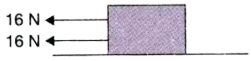
19. Which of these sets of forces is balanced?

A. 

B. 

C. 

D. 

Answer: B

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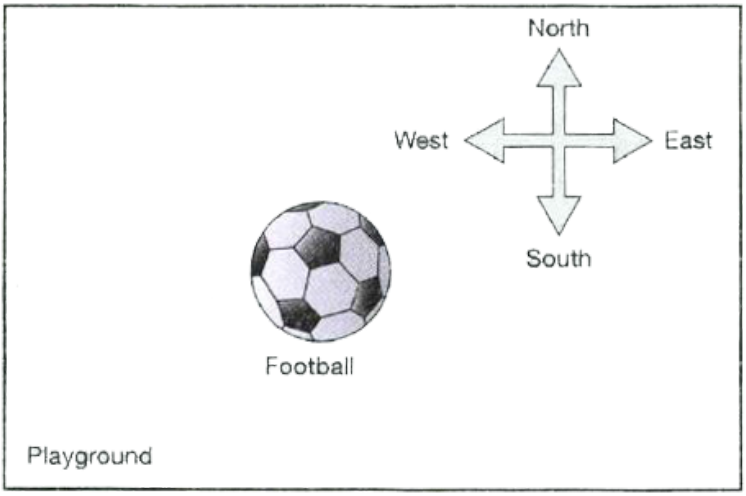
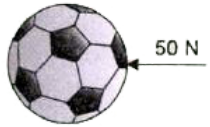
20. The football in the picture was moved towards the east by a force of magnitude 50 N. Which of these options correctly represents the force applied to the football?



A. 

B.



C.

D.

Answer: A

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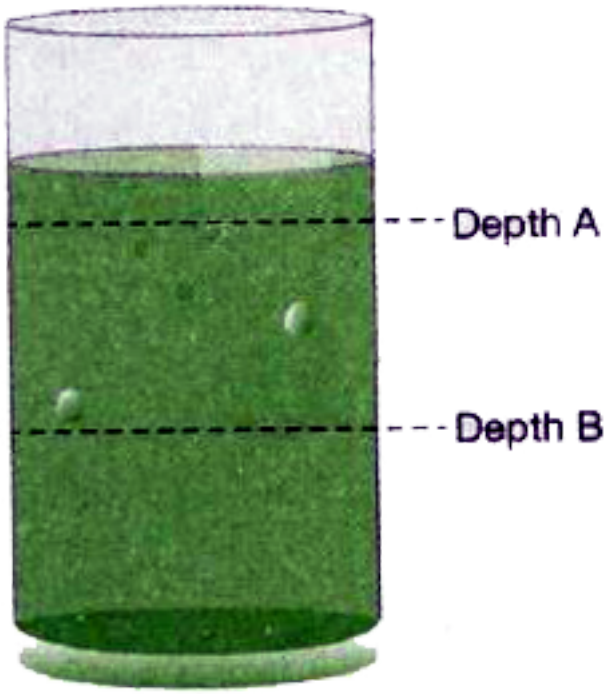
21. AU-tube manometer is used to measure the pressure of liquid at different depths, as shown in the picture. If, at depth B, the difference between the water levels at the two ends of the U-tube is X units, what will this

difference be at depth A?



A. X units

B. Less than X units

C. Greater than X units

D. Cannot be determined

Answer: B

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22. In a U-tube manometer, on which part of the device does the liquid directly exert pressure to give us the reading?

A. Funnel

B. U-tube

C. Rubber film

D. Rubber tube

Answer: C

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23. A batsman hits a cricket ball which then rolls on a level ground . After covering a short distance, the ball comes to rest, The ball slows to a stop because

A. magnetic force

B. frictional force

C. gravitational force

D. muscular force

Answer: B

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24. Which statement is incorrect for liquid pressure?

A. Liquid pressure acts on the top of the container.

B. Liquid pressure acts on the sides of the container.

C. Liquid pressure acts on the bottom of the container.

D. Liquid pressure acts on containers of all sizes and shapes.

Answer: A

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25. Which of these is aimed towards increasing the pressure exerted on a body?

A. Broad feet of a camel

B. Broad shoulder straps of bags

C. Pointed edges of knives and axes

D. Eight tyres provided in heavy trucks

Answer: C

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26. Calculate the pressure exerted on an object if a force of 288 N acts on the object over an area of $0.4m^2$

A. 0.72 Pa

B. 7.2 Pa

C. 72 Pa

D. 720 Pa

Answer: D

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27. Which of these is equivalent to 1 Pa?

A. 1 N of force acting over an area of $1m^3$

B. 1 N of force acting over an area of $1cm^2$

C. 10 N of force acting over an area of $10m^2$

D. 100 N of force acting over an area of $100km^2$

Answer: C

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28. Which of these expressions is equivalent to the pressure exerted on a body?

A. Volume of body x force applied

B. Force applied/volume of body

C. Area of contact/force applied

D. Force applied / area of contact

Answer: D

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29. A force of X Newton is acting on a body towards the left. The body moves towards the right, with a force much smaller than X Newtons. Which of these other forces must also have acted on the body?

A. Force of X Newton towards the left

B. Force of X Newton towards the right

C. Force less than X Newton towards the left

D. Force greater than X Newton towards the right.

Answer: D

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30. Which pair of forces would lead to a net force of 106 N acting towards the right?

A. A force of 104 N acting towards the right and a force of 210 N acting towards the

left

B. A force of 57 N acting towards the right and a force of 49 N acting towards the right

C. A force of 107 N acting towards the right and a force of 1 N acting towards the right

D. None of these

Answer: B

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31. Which of these is the unit of weight?

A. Pascal (Pa)

B. Kilogram (kg)

C. Kilogram force (kgf)

D. Newton per square metre $\left(N / m^2\right)$

Answer: C

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32. Which of these pairs of bodies would have the strongest gravitational force between them?

A. The earth and the sun

B. The earth and a human

C. The earth and a mouse

D. The earth and an elephant

Answer: A

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33. Identify the type of force that is different from the other three

A. Frictional force

B. Magnetic force

C. Gravitational force

D. Electrostatic force

Answer: A

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34. Which of these is an example of muscular force?

A. A magnet sticking to the door of a fridge

B. A boy picking up a dried leaf from the ground

C. A ball rolling on the ground, stopping after a while

D. A flower falling off a tree, always heading towards the ground

Answer: B

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35. Rahul is pushing a heavy sofa in the north-east direction. In which direction would frictional force act on the sofa?

A. North-east

B. South-east

C. North-west

D. South-west

Answer: D

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36. Which of these is NOT an effect of force?

A. Force can make a stationary object move.

B. Force can change the shape of an object.

C. Force can change the physical state of an object.

D. Force can change the direction of a moving object.

Answer: C

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37. Which of these daily-life examples represents both a motion caused by force as well as a change in shape brought about by force?

A. A swing pushed by a child

B. A tin can crushed by a girl after kicking it

C. A bucket pulled with a rope

D. A moving ball kicked in another direction

Answer: B

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