

K.C.P.E SCIENCE

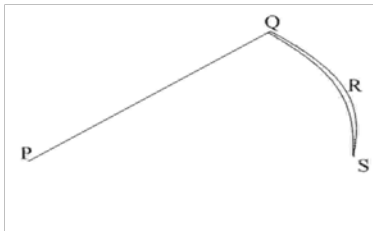
2003-2010

MAKING WORK EASIER

Simple tools

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1.The diagram below represents a fishing rod with points labelled P, Q, R and S.



When in use the fulcrum is at point

- A. P
- B. Q
- C. R
- D. S

Q18,2004

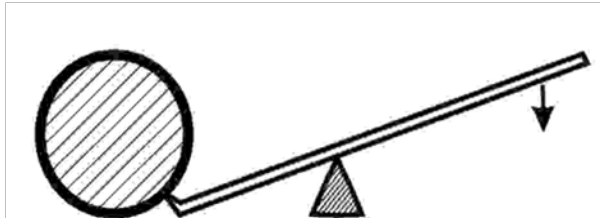
2.Which one of the following machines is the effort equal to the load and the effort distance equal to the load distance?

- A. Inclined plane.
- B. Wheel and axle.
- C. Lever.

D. Single fixed pulley.

Q8,2004

3.The diagram below represents a simple machine in use.



B. a wheel and axle

C. a lever

D. a pulley

Q16,2005

4.Which one of the following pairs of levers has the position of load, fulcrum and effort as a forearm?

A. Fishing rod and pliers.

B. Spade and tongs.

C. Bottle top opener and nutcracker.

D. Scissors and claw hammer.

Q29,2005

5.The reason for using rollers when moving heavy objects on a floor is to

A. make objects lighter

B. avoid damaging the floor

C. increase speed of moving objects

D. reduce force that opposes movement.

Q17,2005

6.Which one of the following levers when in use has the position of the effort between the load and the fulcrum?

- A. Spade.
- B. Wheelbarrow.
- C. Claw hammer.
- D. Crowbar.

Q45,2006

7.The diagram below represents a simple machine.

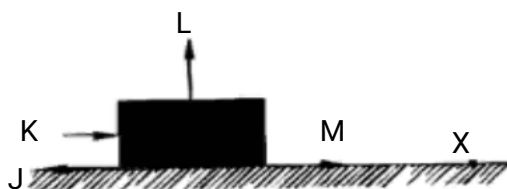


Which of the positions labelled **P**, **Q** and **R** would represent the load, effort and fulcrum when the machine is in use?

	Load	Effort	Fulcrum
A.	P	Q	R
B.	R	P	Q
C.	Q	P	R
D.	R	Q	P

Q46,2007

8.The diagram below represents a block of wood being pushed along a surface towards point **X**.



Which one of the arrows represents the direction of the force of friction?

- A. J.
- B. K.
- C. L
- D. M

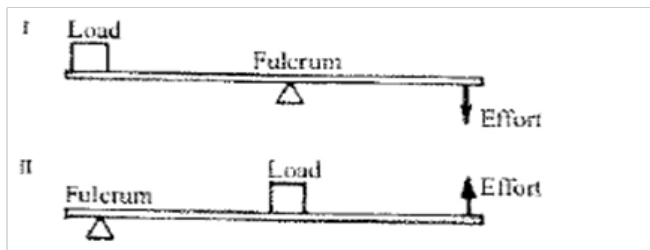
Q47,2007

9.The purpose of using rollers to move a load is to

- A. increase the force required to push the load
- B. reduce the force that hinders movement of the load
- C. make the load lighter
- D. control the direction of the movement of the load.

Q48, 2009

10.A certain machine, when in use, can work with load, effort and fulcrum at different positions as shown in the diagrams I and II.



The machine is

- A. wheelbarrow
- B. Crowbar
- C. Spade
- D. claw hammer.

Q17, 2009

Balancing

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1. On a see-saw a small boy can lift a big boy when

- A. the small boy stands on it
- B. the big boy moves closer to the fulcrum
- C. the two boys interchange positions
- D. the two boys move equal distances away from the fulcrum.

Q49,2010

2. The following activities are carried out when making a beam balance but not in the correct order:

- (i) *Suspend the arm to find balance point and mark.*
- (ii) *Make a base, a stand and the arm.*
- (iii) *Fix the stand and the arm to the base.*
- (iv) *Suspend tins on both sides of the arm.*

Which one of the following is the **CORRECT** order in which the activities are carried out?

- A. (iii) (i) (ii) (iv).
- B. (ii) (i) (iii) (iv).
- C. (iii) (ii) (iv) (i).
- D. (ii) (i) (iv) (iii).

Q48,2006

3. In which of the following is work made easier by changing the direction of force applied?

- A. Ladder.
- B. Flag post.
- C. Staircase.

D. A road winding uphill.

Q27, 2009

4. On a see-saw a small boy can lift a big boy when

- A. the small boy stands on it
- B. the big boy moves closer to the fulcrum
- C. the two boys interchange positions
- D. the two boys move equal distances away from the fulcrum.

Q49, 2010

Movement

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1. Which one of the following statements is **CORRECT** about a stone thrown a few metres

directly upwards by a passenger in a moving lorry? The stone will fall

- A. in front of the person
- B. behind the person
- C. on the person
- D. behind the lorry.

Q49, 2006

2. Which one of the following statements is **NOT TRUE**

about the force that opposes movement? The force

- A. can be reduced by streamlining
- B. makes the load heavier
- C. increases effort required to move the load
- D. produces heat.

Q36, 2007

Levers

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1. Which one of the following pairs of machines consists of levers only?

- A. Pliers and wedge.
- B. Crowbar and nutcracker.
- C. Screw and scissors.
- D. Bottle opener and knife.

Q39, 2004

2. Which one of the following statements is **TRUE** about some levers when in use?

- A. In a crowbar, the load is between the effort and the fulcrum.
- B. In a crowbar, the effort is between the load and the fulcrum.
- C. In a wheelbarrow, the fulcrum is between the load and the effort.
- D. In a spade, the effort is between the load and the fulcrum.

Q15, 2010

3. Which one of the following examples of levers has the position of effort between the positions of load and fulcrum when in use?

- A. Spade.
- B. Wheelbarrow.
- C. Claw hammer.
- D. Crow bar.

Q41, 2008

Friction force

1. In which of the following cases is friction both an advantage and a disadvantage?

- A. Dragging a heavy box along the floor.
- B. Moving parts of a machine.
- C. Climbing up a hill.
- D. Drawing water from a well using a rope.

Q47, 2004

2.. The diagram below represents a tyre of a vehicle.



vehicle tyre is to

D. make them lighter.

Q47,2006

3.In which one of the following activities is friction **LEAST** needed?

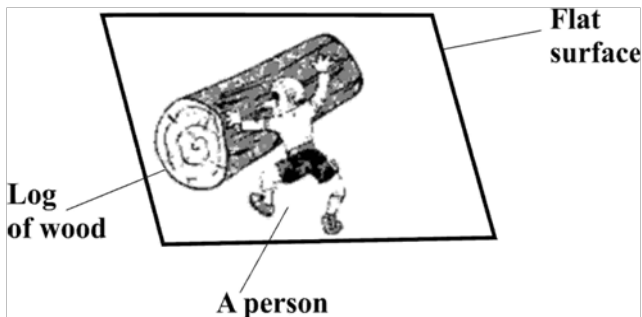
- A. Writing.
- B. Riding a bicycle.
- C. Walking.
- D. Using pulleys.

Q13 ,2008

3. The diagram below represents a person pushing a heavy log of wood along a flat surface.

Which one of the following changes would make the person push the log more easily?

- A. Smearing oil on the flat surface.
- B. Wearing shoes with rough soles.
- C. Smearing oil on the log of wood.
- D. Placing rollers on the flat surface



Pulleys

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1. Which one of the following machines is the effort equal to the load and the effort distance equal to the load distance?

- A. Inclined plane.
- B. Wheel and axle.
- C. Lever.
- D. Single fixed pulley.

Q9, 2004

2. Which one of the following is a **CORRECT** statement about pulleys? Pulleys

- A. Increase friction
- B. Reduce the weight of the load
- C. Change the direction of force
- D. Increase speed

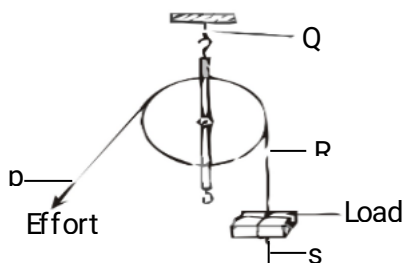
Q26, 2003

3. A single fixed pulley

- A. changes direction of force
- B. increases effort distance
- C. reduces effort required
- D. reduces load distance.

Q46, 2006

4. The diagram below represents a set-up that is used to lift a load.



To investigate the force required to lift the load a spring balance must be at

- A. **P**
- B. **Q**
- C. **R**
- D. **S.**

Q12,2007

5.Which one of the following statements about a single fixed pulley is **TRUE**? The effort

- A. moves a shorter distance than the load
- B. and the load move the same distance
- C. moves twice the distance the load moves
- D. required is half the load.

Q14, 2008

6.The following are steps followed when investigating the force required to lift a load using a fixed pulley but not in their correct order:

- (i) *Tie the load with a string*
- (ii) *Pass the string with the load through the pulley on the support*
- (iii) *Pull the spring balance and measure*
- (iv) *Fix the pulley on the support*
- (v) *Tie the spring balance at the end of string.*

The **CORRECT** order of steps to be followed is

- A. (ii), (i), (iv), (v), (iii)
- B. (i), (ii), (iv), (v), (iii)
- C. (v), (i), (ii), (iv), (iii)

D. (iv), (i), (ii), (v), (iii).

Q50,2010

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Inclined planes

1. An inclined plane makes work easier by

- A. changing direction of effort.
- B. increasing effort distance.
- C. decreasing load distance.
- D. decreasing the load

Q49,2004

2. Which one of the following pairs of machines belongs to the same group as a ladder?

- A. Claw hammer and bottle opener.
- B. Spade and fishing rod.
- C. Staircase and a road winding uphill.
- D. Handcart and wheelbarrow.

Q14,2007

3. A person intends to push a drum full of oil along an inclined plane on to a platform, Decreasing the slope of the inclined plane would

- A. decrease effort applied
- B. decrease effort distance
- C. decrease load distance
- D. not affect the effort applied

Q19, 2008

4. Which one of the following groups of machines consists of inclined planes only?

- A. Ladder, spade, crowbar.
- B. Staircase, ladder, a road winding up a hill.

C. Spade, staircase, ladder.

D. A road winding up a hill, claw hammer, crowbar.

Q26,2010

5.Which one of the following is **NOT** an example of an inclined plane?

A.Crowbar

B.Staircase

C.Wedge

D.Screw

Q28,2003