

NAME
SCHOOL

INDEX NUMBER
DATE

FORCES

1. 1997 Q3 P1

Give a reason why the weight of the body varies from place to place

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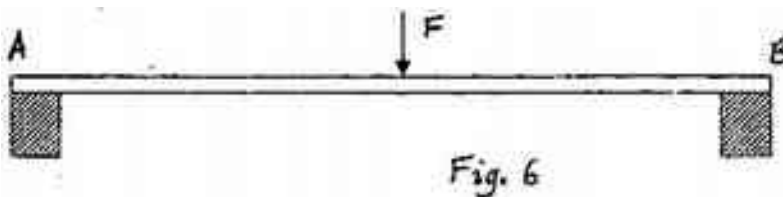
2. 1997 Q8 P1

State the reason why water spilled on a glass surface wets the surface

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3. 1997 Q13 P1

Figure 6 shows a beam AB supported at points A and B. A large F is applied on the beam as shown. Mark on the diagram, the position X, where a notch is likely to appear.



4. 1998 Q5 P1

A metal pin was observed to float on the surface of pure water. However the pin sank when a few drops of soap solution were carefully added to the water. Explain his observation.

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5. 2000 Q2 P1

A bag of sugar is found to have the same weight on planet earth as an identical bag of dry sawdust on planet Jupiter. Explain why the masses of the two bags must be different.

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6. **2003 Q11 P1**
 One of the factors that affect the surface tension of a liquid is the presence of impurities. State one other factor.

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7. **2004 Q10 P1**
 State one way of reducing surface tension in water.

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8. **2005 Q11 P1**
 Fig 8 shows water drops on two surfaces. In 8 (a) the glass surface is smeared with wax while in 8 (b) the glass surface is clean.

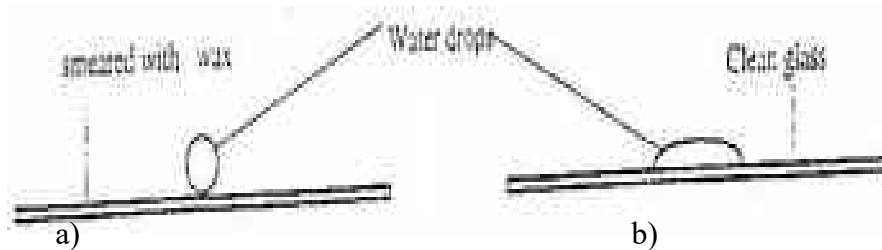


Fig 8

Explain the difference in the shapes of the drops. (2marks)

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9. **2006 Q2 P1**
 Figure 2 (a) shows body being acted on by two forces, F_1 and F_2



On figure 2 (b) draw the force F_3 that has same effect on the body as the two forces

(1 mark)

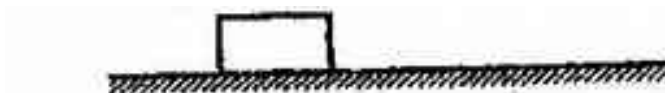
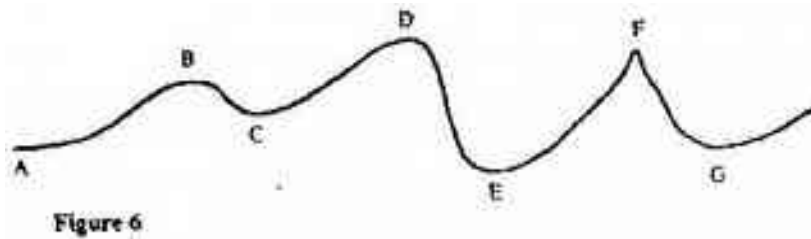


Figure 2

10. 2006 Q10 P1

Figure 6 shows the path taken by a matatu travelling on a horizontal ground (a winding road)

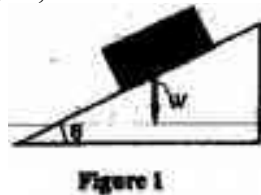


The speed of the matatu is constant. Identify with reason the point along the path which a load placed loosely on the rack (carrier) of the matatu is most likely to roll off. (2 marks)

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11. 2008 Q3 P1

Fig. 1 shows a brick placed on a plane inclined at an angle θ to the horizontal. The weight, W , of the brick is shown.



a) On the same diagram show with arrows the other two forces acting on the brick and name them. (1mark)

b) State how each of the two forces named (a) above is affected when the angle θ is reduced. (1mark)

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12. 2009 Q3 P1

A steel needle when placed carefully on water can be made to float. When a detergent is added to the water it sinks. Explain this observation. (2 marks).

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13. 2010 Q10 P1

The weight of a solid in air is 5.0N. When it is fully immersed in a liquid of density 800kgm^{-3} its weight is 4.04N. Determine:

a) The up thrust in the liquid

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b) The volume of the solid.

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14. 2011 Q7 P1

Figure 6 shows a small toy boat floating on water in a basin. X and Y are two points near the toy.

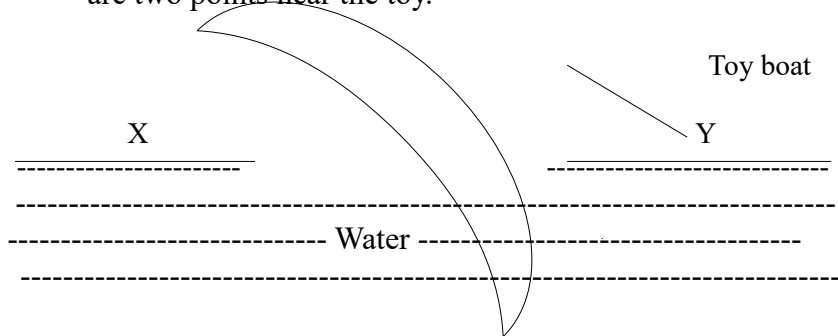


Fig 6.

When a hot metal rod is dipped into the water at point X, the toy is observed to move towards Y. Explain this observation. (2 marks)

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15. 2012 Q2, 3 P1

2. A student pulls a block of wood along a horizontal surface by applying a constant force. State the reason why the block moves at a constant velocity. (1mark)

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3. A solid weighs 16.5 N on the surface of the moon. The force of the gravity on the moon is 1.7Nkg^{-1} . Determine the mass of the solid. (3marks)

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