

NEW STANDARD ACADEMY

SEMRI KOTHI SUPER MARKET, RAEBARELI
CLASS 9 (PHYSICS) DPP (Academy) 02/09/2024

- The force of gravity between two objects is inversely proportional to the square of the.....
- g_e and g , denotes the acceleration due to gravity on the surface of the earth and another planet whose mass and radius are twice that of the earth. The relation that holds is.....
- If the density of planet is increased, then the acceleration due to gravity at its surface will.....
- Dimensional formula of universal gravitational constant is.....
- S.I. unit of gravitational potential is
- If the earth rotates faster, the acceleration due to gravity at equator will
- The orbit of a geostationary orbit is called.....
- If the distance between the earth and the moon becomes just half the present value, then the gravitational force become
- If earth stops rotating, the value of g at the equator will be
- The value of the acceleration due to gravity at the surface of the earth is g . Its value at a depth h below the earth's surface is:
- An artificial satellite is revolving round the earth. A ball is dropped out of the satellite from a side wall then what will be its speed:
- A ball which is thrown up attains a maximum height of 100 m .Its initial speed was ;
- A stone dropped from the roof of a building takes 4s to reach the ground. The height of the building is :
- The value of G is independent of :
- According to the chart , on which planet would a ball fall the fastest ?

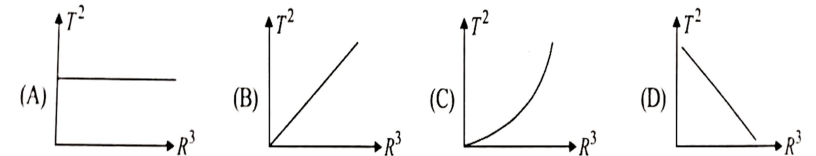
Planet	Earth	Jupiter	Neptune	Saturn
Acceleration Due to Gravity	10	26	14	12

explain how ?

- a) Jupiter b) Saturn c) Neptune d) Earth
- Two rubber balls of the same size are both dropped on the Earth and on the Moon. One ball is solid, and one is hollow. Approximate gravitational field strength on the Earth is 10 N/kg and on the moon is 1.7 N/kg. Which ball has the greatest force acting on it?

Type of ball	Where dropped
(A) Hollow	On the Earth
(B) Hollow	On the Moon
(C) Solid	On the Earth
(D) Solid	On the Moon

- An object of mass 10 kg is at a point on a table. It is moved to a point B by a distance 5 m. If the line joining A and B is horizontal, then what is the work done on the object by the gravitational force?
- An artificial satellite is moving in a circular orbit of radius 42250 km. Find its speed if it takes 24 hours to revolve around the earth
- Which of the following graphs between the square of the time period and cube of the distance of planet from the sun is correct?



- At a certain place, value of g is 1% less than its value on the surface of Earth. If the radius of Earth is given to be 6400 km, then the place is

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CLASS 9 (CHEMISTRY) DPP (Academy) 02/09/2024

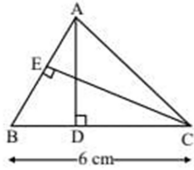
- Answer the following questions:
 - Why is ice at 273 K more effective in cooling than water at the same temperature?
 - Name the two gases which are supplied in compressed form in homes and hospitals. (c) What is dry ice ?
- CO₂ is a gas. Justify the given statement by two reasons.
 - Give reasons for the following:
 - Gases fill up completely the vessel in which they are kept.
 - Gases exert pressure on the walls of the containing vessel.
- What is meant by particulate nature of matter ? List four characteristics of particle nature of matter.
- List three characteristics of particles of matter. Describe one example for each characteristic to illustrate it. Name the characteristics which are responsible for (a) spreading of smell in a room and (b) water taking the shape of the vessel in which it is poured.
- Explain which one will cause more severe burns-boiling water at 100°C or steam at 100°C.
 - Archit dropped a crystal of potassium permanganate into two beakers A and B containing hot water and cold water respectively. After keeping the beakers undisturbed for some time what did he observe and why
- 5 ml of water were taken in a test tube and china dish separately. These samples were then kept under different conditions as given below
 - Both the samples are kept under a fan. State in which case evaporation will be faster.
 - Both the samples are kept inside a cup. State in which case evaporation will be faster. Give reason to support your answer.
- How will the rate of evaporation change if above activity is carried out on a rainy day ? Justify your answer
- Explain how three states of matter arise due to the variation in the characteristics of the particles.
- To which physical state of matter, do the following statements apply?
 - incompressible, no fixed shape
 - incompressible, high melting point
 - compressible, no definite volume
 - incompressible, highly fluid.
- Describe an activity to show that particles of matter have spaces between them.
- Define (a) Compressibility (b) Rigidity (c) Fluidity.
- What types of mixtures are represented by the following?
 - Carbon dioxide gas dissolved in water
 - Air containing suspended particles.
 - Soap bubbles formed by blowing air into soap solution.
- Solubility of KNO₃ at 313 K is 62 g. What mass of KNO₃ would be needed to produce a saturated solution of KNO₃ in 50 g of water at 313 K?
- State one property in which a solution of sugar in water resembles a mixture of sugar and sand and one property in which it differs from it.
- What would you observe when
 - A saturated solution of potassium nitrate prepared at 60°C is allowed to cool to room temperature ?
 - A mixture of iron filings and sulphur is heated strongly ?
 - A colloidal solution of starch is passed through an ordinary filter paper
- The teacher instructed three students A, B and C respectively to prepare a 50% (mass by volume) solution of sodium hydroxide (NaOH). A dissolved 50 g of NaOH in 100 ml of water. 'B' dissolved 50 g of NaOH in 100 g of water. The student 'C' dissolved 50 g of NaOH in water to make 100 ml of solution. Which one of them has made the desired solution and why?
- Calculate the mass of potassium sulphate required to prepare its 10 percent (mass percent) solution in 100g of water.
- What volumes of ethyl alcohol and water must be mixed together to prepare 250 mL of 60 percent volume by volume solution of alcohol in water ?
- Two students Ramesh and Alka were required to prepare 10 percent (mass/mass) solution of sodium chloride in water. For that, Ramesh dissolved 10g of the salt in 100g of water while Alka dissolved 10g of the salt in 100g of the solution. Which one of the two prepared the correct solution ?
- How much water should be mixed with 12 ml of alcohol so as to obtain 12% alcohol solution ?
- A solution contains 60 g of sugar in 480 g of water. Calculate the concentration of solution in terms of mass by mass percentage of the solution.

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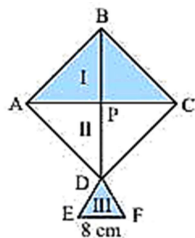
SEMRI KOTHI SUPER MARKET, RAEBARELI

CLASS 9 (MATH'S) DPP (Academy) 02/09/2024

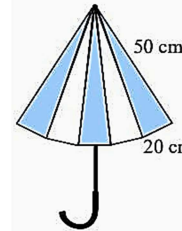
- If semiperimeter of a triangle is 60 cm & its two sides are 45 cm, 40 cm then find third side.
- If one side from two equal sides of a Δ is 14 cm and semiperimeter is 22.5 cm then find the third side.
- Find the length of AD in given figure, if EC = 4 cm and AB = 5 cm



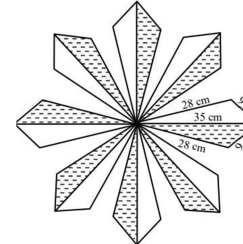
- Find the area of a triangle whose sides are of lengths 52 cm, 56 cm and 60 cm respectively.
- Using Heron's formula, find the area of an equilateral triangle of side a units.
- Find the percentage increase in the area of a triangle if its each side is doubled.
- The lengths of the sides of a triangle are in the ratio 3 : 4 : 5 and its perimeter is 144 cm. Find (i) the area of the triangle and (ii) the height corresponding to the longest
- Find the area of an isosceles triangle each of whose equal sides is 13 cm and whose base is 24 cm.
- A rhombus shaped field has green grass for 18 cows to graze. If each side of the rhombus is 30 m and its longer diagonal is 48 m, how much area of grass field will each cow be getting?
- Find the area of a trapezium whose parallel sides 25 cm, 13 cm and other sides are 15 and 15 cm.
- A kite in the shape of a square with a diagonal 32 cm and an isosceles triangle of base 8 cm and sides 6 cm each is to be made of three different shades as shown in figure. How much paper of each shade has been used in it?



- Students of a school staged a rally for cleanliness campaign. They walked through the lanes in two groups. One group walked through the lanes AB, BC and CA, while other through AC, CD and DA (see fig.). Then they cleaned the area enclosed within their lanes. If $AB = 9$ m, $BC = 40$ m, $CD = 15$ m, $DA = 28$ m, and angle $B = 90^\circ$ Which group cleaned more area and by how much? Find the total area cleaned by the students.
- Radha made a picture of an aeroplane with coloured paper as shown in figure. Find the total area of the paper used.
- An umbrella is made by stitching 10 triangular pieces of cloth of two different colours (see figure), each piece measuring 20 cm, 50 cm and 50 cm. How much cloth of each colour is required for the umbrella?



- A floral design on a floor is made up of 16 tiles which are triangular, the sides of the triangle being 9 cm, 28 cm and 35 cm (see figure). Find the cost of polishing the tiles at the rate of 50 paise per cm^2 .



- Sanya has a piece of land which is in the shape of a rhombus. She wants her one daughter and one son to work on the land and produce different crops to suffice the needs of their family. She divided the land in two equal parts. If the perimeter of the land is 400 m and one of the diagonals is 160 m, how much area each of them will get?
- There is a slide in a park. One of its side walls has been painted in some colour with a message "KEEP THE PARK GREEN AND CLEAN" (see figure). If the sides of the wall are 15 m, 11 m and 6 m, find the area painted in colour.
- A triangular park ABC has sides 120 m, 80 m and 50 m (see fig.). A gardener Dhanika has to put a fence all around it and also plant grass inside. How much area does she need to plant? Find the cost of fencing it with barbed wire at the rate of 20 per metre leaving a space 3m wide for a gate on

one side.

19. The triangular side walls of a flyover have been used for advertisements. The sides of the walls are 122 m, 22 m and 120 m (see fig.). The advertisements yield an earning of 5000 per m² per year. A company hired both walls for 3 months. How much rent did it pay?
20. Sides of a triangle are in the ratio of 12 : 17 : 25 and its perimeter is 540 cm. Find its area.

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CLASS 9 (BIOLOGY) DPP (Academy) 02/09/2024

1. What is cell ?
2. Which invention made possible the discovery of the cell ?
3. Who was the first person to witness a live cell under a microscope ?
4. Define unicellular organisms . Glve two examples.
5. How Amoeba being a unicellular organism performs different activities ?
6. What is cytology ?
7. Give a brief description about the Compound microscope.
8. Give the discovery of Antonie van leeuwenhoek about cells.
9. What is a microscope ? State its use.
10. In what aspect do cells of one organism differ from another organism ?
11. Explain in brif the discovery made by Robert hooke.
12. Who proposed the cell theory? Describe it briefly.
13. Give the exceptions of cell theory.
14. What is protoplasm theory?
15. Briefly explain the simple microscope.
16. Write a short note on mitochondria.
17. List the steps of using a compound microscope in your laboratory.
18. Why lysomes known as housekeeper of the cell
19. Explain Chloroplast.
20. Draw the neat and clean diagram of mitochondria