

**ROTARY PUBLIC SCHOOL**  
**WINTER HOLIDAYS HOMEWORK (2017-18)**  
**CLASS-VII**

**Dear Students**

**I hear, I forget**

**I see, I remember**

**I do, I understand**

**This homework has been made as a revision for your preparation for the forthcoming annual examination.**

**Please complete it and handover the following homework in A4 sized ruled sheets in a simple folder with your name, separately for each subject.**

**MATHEMATICS**

**Topic : Properties of Triangles**

Q1. Each of the two equal angles of a triangle is twice the third angle. Find the angles of the Triangle.

(Ans:  $36^\circ$ ,  $72^\circ$ ,  $72^\circ$ )

Q2. If the angles of a triangle are in the ratio 2:3:4, determine the three angles.

( Ans:  $40^\circ$ ,  $60^\circ$ ,  $80^\circ$ )

Q3. A ladder 15m long reaches a window which is 9m above the ground on one side of a Street, the ladder is turned to other side of the street to reach a window 12m high. Find the width of the street.

(Ans: 21m.)

Q4. A man goes 10m due east and then 24m due north. Find the distance from the starting Point.

( Ans:26m)

Q5. In  $\triangle ABC$ ,  $AD \perp BC$  and  $AD^2 = BC \times CD$ . Prove that  $\triangle ABC$  is a right triangle.

Q6. A tree broke at a point but did not separate. Its top touched the ground at a distance of 6dm from its base. If the point where it broke be at a height 2.5dm from the ground.

What was the total height of the tree before it broke? ( Ans. 9dm)

Q7. Two poles of heights 6m and 11m stand on a plane ground. If the distance between their feet is 12m , find the distance between their tops. ( Ans: 13m)

**Topic : Congruence**

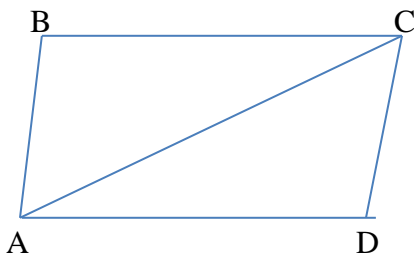
Q8. Show that in an isosceles triangle, angles opposite to equal sides are equal.

Q9. Show that the bisector of vertical angle of an isosceles triangle bisects the base at right angles.

Q10. In  $\triangle ABC$ , angle  $A = 100^\circ$  and  $AB=AC$ . Find angle B and angle C. Ans:  $40^\circ$ ,  $40^\circ$

Q11. Line segments AB and CD bisect each other at O. AC and BD are joined forming triangles AOC and BOD. State the three equality relations between the parts of the two triangles, that are given or otherwise known. Are the two triangles congruent? State in symbolic form. Which congruence condition do you use?

Q12. In the given figure,  $AB \parallel DC$  and  $AB = DC$ . Is  $\triangle ACD \cong \triangle CAD$ ? Also prove that  $AD \parallel BC$ .



- Q13. AD, BE and CF, the altitudes of  $\triangle ABC$  are equal. Prove that  $\triangle ABC$  is an equilateral Triangle.
- Q14. In the given figure, it is given that  $LM = MN$ ,  $QM = MR$ ,  $ML \perp PQ$  and  $MN \perp PR$ . Prove that  $PQ = PR$ .

### Topic : Constructions

- Q15. Draw an equilateral triangle one of whose sides is of length 7cm.
- Q16. Draw  $\triangle ABC$  in which angle  $C = 90^\circ$  and  $AC = BC = 4\text{cm}$ .
- Q17. Draw  $\triangle ABC$  in which  $AC = 6\text{cm}$ , Angle  $A = 90^\circ$  and angle  $B = 60^\circ$ .
- Q18. Draw a right triangle with hypotenuse of length 5cm and one side of length 4cm.
- Q19. Construct a right triangle, right angled at C in which  $AB = 5.2\text{cm}$  and  $BC = 4.6\text{cm}$ .

### Topic : Perimeter and Area

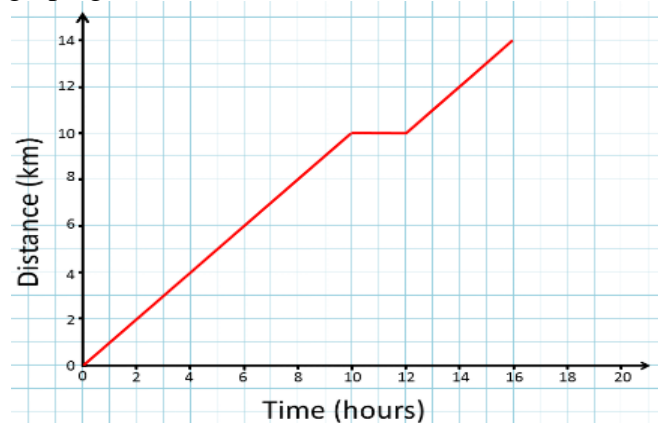
- Q20. How many envelopes can be made out of a sheet of paper 125cm by 85cm; supposing one envelope requires a piece of paper of size 17cm by 5cm? ( Ans: 125)
- Q21. A rectangular park is 45m long and 30m wide. A path 2.5 m wide is constructed outside the park. Find the area of the path. (Ans:  $400\text{m}^2$ )
- Q22. A rectangular lawn is 30m by 20m. It has two roads each 2m wide running in the middle of it, one parallel to the length and the other parallel to the breadth. Find the area of the roads. (Ans:  $96\text{m}^2$ )
- Q23. If the area of a rhombus be  $24\text{cm}^2$  and one of its diagonals be 4cm, find the perimeter of the rhombus. (Ans:  $8\sqrt{10}\text{cm}$ )
- Q24. The diameter of the wheel of a car is 77cm. How many revolutions will it make to travel 121km? (Ans: 50000)
- Q25. A race track is in the form of a ring whose inner circumference is 352m, and the outer circumference is 396m. Find the width of the track. (Ans: 7 m)

### SCIENCE

1. Name one electrical safety device used at homes.
2. Which component of blood helps in clotting of blood?
3. A mirror is curved inside which mirror is this?
4. Define time period of a simple pendulum.
5. Name the meter which is used to measure the instantaneous speed of vehicle.
6. Which method of asexual reproduction is adapted by fungus?
7. Why do we often sneeze when we inhale a lot of dust laden air?
8. Write down a short note on Veins.
9. Define electromagnet and mention its two uses.
10. A pendulum oscillates 20 times in a minute, calculate its time period.
11. Write down the formulae for the following ions.
 

(a) Carbonate	(b) Sulphate
(c) Iron (II)	(d) Oxide
12. Write down the word equation of respiration for:
  - a) Yeast
  - b) Human muscle cells anaerobic respiration
13. Define pulse and pulse rate.
14. Explain the process of grafting in plants with one example.  
 Jubeda's father wants to replace the fuse wire with a new wire without any rating but Jubeda opposed him explain why?

15. The readings of odometer of a car at the start of trip were 1324 km, after the trip the readings were 1444 km if this trip was completed in 5 hours, calculate the speed and then convert this speed to m/s.
16. Jaya was reading about different types of pollinations, she studied that in case 'A' the pollen lands on the stigma of the same flower while in another case 'B' the pollen lands on the stigma of the different flower identify the different types of pollination in the two cases and give their names. Differentiate between pollination and fertilization.
17. Observe the distance time graph given here and then answer.



- i.
  - b. What is the distance covered by object in 2 hours.
  - c. If the vehicle applies brakes in which direction the graph will turn.
  - d. If the vehicle stops what will be the shape of graph?
  - e. Calculate the average speed of vehicle shown in the graph given here.
18. Last month I saw a sign board of solar clock while going to Noida . This was actually a sundial which was introduced in India by an Indian mathematician king Jaisingh II.  
The sundial is based on the fact that the heights of shadows of an object are different at different times. A simple sundial consists of a circular plate with a triangular plate of metal fixed vertically on it. The plate is kept in North-South direction. Some historical sundials also exists in our country Jantar Mantar in Delhi is one out of them.  
Now answer:
  - (a) Who introduced sundials in India?
  - (b) Name a historical sundial in India.
  - (c) What can be a draw back of solar clocks?
  - (d) What is the principle of sundials?
  - (e) Name the two components of sun dial.
  - (f) In which direction the triangular plate is kept?

## SOCIAL SCIENCE

1. What are the two categories of the world's grassland?
2. Write some effects of Chinook. Write three points to support your answer.
3. What are the two characteristic features of a desert?
4. Why is there little rainfall in Ladakh Desert?
5. Name the countries that are covered by the velds.
6. Name various forms of communication.
7. Why does media sometimes focus on a particular aspect of a story?
8. Mention any one positive aspect of television.
9. How is the Governor of a state appointed?
10. What do you know about a wallpaper?

11. Who compiled the compositions of Baba Guru Nanak?
12. Whom did king Anangabhim-3 dedicated his kingdom to? What did he proclaim himself?
13. Why was the second category of the early Bengali literature not written down?
14. Why were the Bengali Brahmanas allowed to eat fish?
15. Name any two saints of Maharashtra.

**Revise all the syllabus completed.**

### **ACTIVITIES-**

**History-** On an outline map of Indian sub-continent, mark the birthplaces of following saints of bhakti movement- Guru Nanak, Mira Bai, Tukaram, Ramdas, Ramanuja, Shankra Deva, Surdas and paste it in your history note book.

**Geography-** On the physical map of India, draw the course of river Ganga and Brahmaputra from the source to the mouth. Also draw Hooghli river, Thar Desert, Karakoram Range, Ladakh and paste it in your geography note book.

**Civics-** Make an attractive advertisement by your own creativity in your civics note book about any one social cause given below-

- a) Beti Bachao Beti Padhao
- b) Environmental Pollution
- c) Illiteracy in India