

KVS – CHANDIGARH

REGION

MATHEMATICS OLYMPIAD

In association with

WWW.PIONEERMATHEMATICS.COM

{Celebrating International Mathematics and KVS golden jubilee}

INSTRUCTIONS MANUAL

“It’s not enough to have good mind, the main thing is use it well”

**For Online Solutions +Doubt Clearance Visit: Www.Pioneermathematics.Com With Compete Training 24*7
Online Available Mobile: 9815527721, 4617721 S.C.O. 320, SECTOR 40-D, CHANDIGARH**

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Notices {For Notice Board}



KVS Chandigarh Region Mathematics Olympiad 2012 - 2013

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PIONEERMATHEMATICS.COM

{Celebrating International Mathematics Year & KVS Golden Jubilee}

Round - I	Date (Day)	Classes(Groups)	Syllabus
Vidyalaya Level	03/07/2012 Tuesday	A - 6th, 7th, 8th B - 9th, 10th C - 11th, 12th	The syllabus for Round I will be their previous classes + MAT (Mental Ability Test)

1. All students who cleared the cut off will get the Certificate of Participation
2. The selected students will qualify for next Round & will get preparation booklet for Round II

Round - II	Date (Day)	Classes(Groups)	Syllabus
Cluster Level (for selected students only)	21/07/2012 Saturday	A - 6th, 7th, 8th B - 9th, 10th C - 11th, 12th	Numbers, Theory, Algebra, Arithmetic, Mensuration, Geometry, MAT

PRIZES : Watches & other utilities for daily life. Courtesy : www.pioneermathematics.com
The selected students will qualify for next round & get booklet for Round II

Round - III	Date (Day)	Classes(Groups)	Syllabus
Regional (for selected students of II Round)	11/08/2012 Saturday	who cleared II Round	Number System, Algebra, Geometry, Mensuration, Arithmetic, functional equations Trigonometry + MAT

PRIZES : • NetBook* • Laptop* • 5-7 days camp in RO-Chandigarh for INMO & JMO-KVS Preparation
• Selected students will get Olympiad Training Camp for INMO.

For details contact :

Visit : www.pioneermathematic.com
(Latest update section or Competitions
Online Training + Testing Support)
Mobile : 98722 01234, 0172-4617721

School's Co-ordinator :

“Register with your School's co-ordinator & get free booklet”

* Terms & Conditions Apply

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Conditions, Rules with Regulation and Duty of Teachers

Conditions and Rules with Regulation:

1. All the students should reach examination hall 15 minutes before the paper.
2. No Rough sheets are allowed.
3. Only the qualify students of round 1 are allowed to give the test for round 2.
4. The final result will be uploaded on pioneer website & result will be also displayed on notice boards of school.
5. No rechecking or reevaluation will be accepted or will be entertained at any case.
6. Only KVS students are allowed to sit in the examination.
7. Mobile, Calculators and other Electronic items are not allowed in examinations Hall.
8. The language medium of the paper is in English only.
9. Those students who got cleared the Round-I will get only Round –II Booklet and those will cleared the Round-II will get the Round-III Booklet.
10. Answer's key will be send for Round-I to teachers with Question Paper and they have to check and send the result in Excel format attached here within limited time period to Principal, RO-Chandigarh and Pioneermathematics.com
(At info@pioneermathematics.com).
11. The list of selected students for Round-II will be uploaded to all the websites involved and copy of total result will be send to all the school's Principals.
12. For any query and instruction you can contact the
 1. **RO Chandigarh**
 2. **Pioneer mathematics: 0172-4617721**
13. Students with non-maths in +1/+2 are also eligible.

Duties of Teachers:

1. The date & timing of examination should be informed to the students personally in the classes. (Apart from notices on notice board)
2. The teachers should also inform the eligibility criteria, examination criteria & rules for the examination with Rewards Involved.
3. The checking & marking schemes should also be informed to students in advance.(is uploaded on website also).
4. The teachers on examination duty must ensure that the student report to

examination hall 10 minute before exam starts.

5. In any condition, No person may enters or leave the examination hall without permission of on duty teachers.

6. No rough papers are allowed as rough space is provided in paper itself.

Prize at Different Level, Syllabus & Classes Involved

Prize at Different Level

Phase	Level	Prizes
I	School Level	Certificate Provided by KVS (To Selected Students Only)
II	Cluster-level (9 Cluster)	Watches & other Utilities for daily Life and 1 year subscription of pioneermathematics will be Provided by www.pioneermathematics.com
III	Regional-level (RO Chandigarh)	Prizes: Netbooks, Laptop* & 2 Year Subscription of pioneermathematics provided by www.pioneermathematics.com (5-7 days camp will be organized at RO Chandigarh for INMO, JMO- KVS. This camp will be organized under the guidance of Professionals & professors from the reputed universities & Institutions.)

- Those selected in regional level & Trained in the camp will represent KVS-Chandigarh region in INMO conducted by NBHM.

Syllabus and Classes Involved

Round 1: Classes Involved: - 6th to 12th

Syllabus: - The syllabus for round-1 will be their previous classes syllabus + MAT (Mental ability test).

For example: 6th class Contain syllabus of 5th class.

7th class Contain syllabus of 6th, 5th etc.

Round 2: Classes Involved: - The students who cleared the cut offs of the 1st round will be qualify for round 2.

Syllabus: - The syllabus for round 2 is Number System, Algebra, Arithmetic, Geometry, Menstruation + (MAT)

Round 3: Classes Involved: Qualified students of round 2.

Syllabus: The syllabus for round 3 is Number system, Algebra, Geometry, Arithmetic, Menstruation, functional equations, Trigonometry + MAT.

Usage of www.pioneermathematics.com in schools by teachers for

Students

Sr	6 th Class Teachers	7 th Class Teachers	8 th Class Teachers	9 th Class Teachers	10 th Class Teachers	11 th Class Teachers	12 th Class Teachers
1.	Syllabus Learning & Practice	Syllabus Learning & Practice	Syllabus Learning & Practice	Syllabus Learning & Practice	Syllabus Learning & Practice	Learning & Practice	Learning & Practice
2.	Online Testing	Online Testing	Online Testing	Online Testing	Online Testing	Online Testing	Online Testing
3.	Olympiad Foundation	Olympiad Foundation	Olympiad Foundation	IIT-JEE Foundation	IIT-JEE Foundation	IIT-JEE/ AIEEE Study Program	IIT-JEE/ AIEEE Study Program
4.	Vedic Mathematics	Vedic Mathematics	Vedic Mathematics	Olympiad Foundation	Olympiad Foundation	Vedic Mathematics	Vedic Mathematics
5.	Formative Assessment	Formative Assessment	Formative Assessment	Vedic Mathematics	Vedic Mathematics	Previous Years IIT-JEE & AIEEE Papers	Previous Years IIT-JEE & AIEEE Papers
6.	Summative Assessment	Summative Assessment	Summative Assessment	Formative Assessment	Formative Assessment	I.Q. Sharpeners	I.Q. Sharpeners
7.	I.Q. Sharpeners	I.Q. Sharpeners	I.Q. Sharpeners	Summative Assessment	Summative Assessment	Motivational	Motivational
8.	Motivational	Motivational	Motivational	I.Q. Sharpeners	I.Q. Sharpeners		
9.				Motivational	Motivational		

How Students can take Benefits of online Olympiad Courses

1. The online Olympiad helps the students in nurturing their mathematical talents.
2. It helps the student to gain, confidence & to increase the spirit of competitiveness.
3. It helps the students to get a chance to take part in INMO.
4. Students can get a chance to be assessed at international level and are awarded performance based ranking.
5. The spirit of competition & sense of recognition inspire students to excel in the chosen field of study & set higher goals.
6. Every participant is awarded with the certificate of participation. Toppers are awarded with merit certificate.
7. It is beneficial because Student can study any time-anywhere suitable to their limits & schedules.
8. The pioneer online course also provides the **Doubt Forum** which helps the students to clear their doubts any time without hesitation.
9. Student will get exclusive & important content to develop their level set for Olympiad.
10. **The most important benefit of this online Olympiad course is that it helps the students to directly use the Vedic math in solving typical calculation that no other site can provide this.**
11. Another benefit of pioneer online Olympiad course is that it provides the solved previous year papers with smart solutions.
12. The online course is helpful because it provides 24x7 online availability.

Guidelines for Preparation

Step-I: First of all go through the basics and then only start studying Olympiads

Step-II: Secondary study & analyses the theory & illustration and you should also understand the application apart from the problems to develop your skills.

Step-III: After being sure about learning & start participating by taking self tests through objective testing.

Step-IV: Do 2-3 chapters of Vedic mathematics every week & must revise them on Sunday.

Step-V: Do-solve the previous year papers in the given time limits & check them from the solution provided.

Sample Paper

KVS Junior Mathematics Olympiad (JMO)

M.M. 100

Time: 3 hours

Note: Attempt all questions.

1. Factorise :

$$(a+b+c)^3 - a^3 - b^3 - c^3$$

2. Determine the kind of a triangle if it is known that that its medians are related by the equality

$$m_a^2 + m_b^2 = 5m_c^2$$

m_a : Stands for median through angle A.

3. Two circles of radius r are externally tangent. They are also internally tangent to the sides of a right triangle of 6, 8 and 10, with the hypotenuse of the triangle being tangent to both circles.

Find the value of radius r .

4. A journey of 192 KM from Mumbai to Pune takes 2 hours less by a superfast train than 2 hour's less by a super fast train than that by an ordinary passenger train. If the average speed of the lower train is 16 KM /h less than that of the faster train, find their average speeds.

5. Given a list of 1998 odd numbers, is it possible that the square of one of them is equal to sum of the squares of the other 1997 numbers?

6. The height of a cone is 30 cm. A small cone is cut off at the top by a plane parallel to the base. If its volume be $1/27$ of the volume of the given cone, at what height above the base is the section made?

7. Transpose letter to digits :

$$\begin{array}{cccc} A & B & C & \& A & D & G \\ + D & E & F & & + B & E & H \\ \hline G & H & I & & C & F & I \end{array}$$

The digit value is same for same letter in both the problem.

8. Find seven different unit factors (volume of a, b, c, d, e, f and g) whose sum is 1.

$$\frac{1}{a} + \frac{1}{b} + \frac{1}{c} + \frac{1}{d} + \frac{1}{e} + \frac{1}{f} + \frac{1}{g} = 1$$

9. Find the remainder when

7^{84} is divided by 342.

10. Evaluate

$$\left[1 + \frac{1}{2^2 - 1}\right] \left[1 + \frac{1}{3^2 - 1}\right] \dots \left[1 + \frac{1}{99^2 + 1}\right]$$

Previous Year Papers

Junior Mathematics Olympiad

KENDRIYA VIDYALAYA SANGATHAN

12th KVS Junior Mathematics Olympiad – 2009

Time: 3 Hours

M.M. 100

NOTE: Attempt all questions. All questions carry equal marks. The use of electronic devices is strictly prohibited.

1. Consider the following multiplication in decimal notations (999). $(abc) = def132$, determine the digits a, b, c, d, e, f.
2. Find the greatest number of 4 digits, which when divided by 3, 5, 7, and 9 leaves remainder 1, 3, 5 and 7 respectively.
3. If n is a positive integer such that $n/810 = 0d25d25$
Where d is a single digit in decimal base. Find 'n'.
4. Solve in integers: $3x^2 - 3xy + y^2 = 7$ and $2x^2 - 3xy + 2y^2 = 14$
5. Let x be the LCM of $3^{2002} - 1$ and $3^{2002} + 1$. Find the last digit of x.
6. Let $f_0(x) = 1/1-x$ and $f_n(x) = f_0(f_{n-1}(x))$ Where $n = 1, 2, 3, \dots$. Calculate $f_{2009}(2009)$
7. Triangles ABC and DAG are two isosceles triangles with $BAC = 20^\circ$ and $ADC = 100^\circ$. Show that $AB = BC + CD$.
8. Two intersecting circles E_1 and E_2 have a common tangent which touches E_1 at P and E_2 at Q. These two circles meet at M and N where N is nearer to PQ than M. The line PN meets the circle E_2 again at R. Prove that MQ bisects angle PMR.
9. AB is a line segment of length 24 cm. and C is its middle point. On AB, AC and CB semi circles are described. Determine the radius of the circle which touches all the three semi circles.
10. Prove that $a^4 + b^4 + c^4 \geq abc(a + b + c)$

Marking and Duration etc.

Marking (same for all 3 rounds):

1. Each question carries 4 marks.
2. There is no negative marking.

Duration:

KVS Olympiad Paper Information				
Set	Class	Duration	Problems	Marks
Section A				
Set 1	6th	60 Min.	25 Ques.	4 Marks each
Section B				
Set 1	7th	90 Min.	35 Ques.	4 Marks each
Section C				
Set 1	8th	120 Min.	45 Ques.	4 Marks each
9th & 10th Class				
Set 2	9th	120 Min.	50 Ques.	4 Marks each
Set 2	10th	120 Min.	50 Ques.	4 Marks each
11th & 12th Class				
Set 3	11th	120 Min.	60 Ques.	4 Marks each
Set 3	12th	120 Min.	60 Ques.	4 Marks each
No Negative Marking				

Advantages of Participation in Olympiads

1. It helps to improve the students interest and enthusiasm for mathematical problem solving, develop mathematics intuition, reasoning & logical thinking as well as critical & creative thinking.
2. Every participant is awarded with the certificate of participation. Toppers are awarded with merit certificate.
3. It helps to improve the student's mathematics grade because they can apply problem solving strategies learnt during the training to their daily school mathematics.
4. It helps to recognize and reward achievement at all levels.
5. It helps to monitor individual progress in a range of subject-based skills.
6. It helps to provide an opportunity for all students to gain a measure of their skills in mathematics in an external assessments situation.
7. Olympiad's certificates will make students eligible for scholarships & Placement in good company at higher education level.

Every Stage Deadlines and Prepared Schedule

Paper(level)	Date	Day	Time	Class
Round-I	03-July-2012	Tuesday	2 Hours	<ul style="list-style-type: none">• 6th, 7th, 8th• 9th, 10th• 11th, 12th
Round-II	21-July-2012	Saturday	2 Hours	<ul style="list-style-type: none">• 6th, 7th, 8th• 9th, 10th• 11th, 12th
Round-III	11-Aug-2012	Saturday	2 Hours	For selected Students only

Rewards

Round - I

Prizes: All the students who will clear the cut offs will get the certificate of participation & certificate will provided by schools. The selected students will be entered into next Round.

Round - II

Prizes: Watches & other Utilities for daily Life and 1 year subscription of pioneer mathematics will be by www.pionermathematics.com

Round - III

Prizes: - Students who will clear the 3rd round will be awarded with the prizes like Net-Books, Laptop* & around 5-7 days camp will be organized at RO Chandigarh for INMO & JMO KVS. This camp will be organized under the guidance of expert professors from the reputed universities.

In spite of Prizes, all the students will be rewarded with participation certificate and toppers will get the merit certificates and will get a chance to appear in INMO.