$\qquad$ s. 2021

# INVITATION TO A 5-DAY ONLINE/VIRTUAL STUDENT-CENTERED TRAINING AND ENHANCEMENT PROGRAM 

To: Education Program Supervisor - Mathematics Public Elementary and Secondary Schools Heads Public Elementary and Secondary Mathematics Teachers Mathematics Coordinators Others concerned<br>This Division

1. The Math Olympiads Training League Incorporated (MOTLI) would like to invite our division to participate in the upcoming competition - Thailand International Mathematical Olympiad (TIMO) Heat Round 2021 - Philippine Region.
2. The activity aims to stimulate and foster young learners' interest in learning mathematics, strengthen the ability of their creative thinking, and widen their International perspective, and promote the development of kindergarten, primary and secondary educational cultures throughout countries.
3. To prepare the student-participants, MOTLI offers Virtual Topic-Appropriate Mathematics Program and Simulation (VTAMPS V.5.0) - a 5-day online/virtual student-centered training and enhancement program open to all registered participants. Attendance to the said program is voluntary in nature and shall not be a requirement to join TIMO-Heat.
4. Interested applicants are encouraged to follow registration procedure attached in this memorandum.
5. Immediate and wide dissemination of this memorandum is desired.


OLGA C. ALONSABE, PhD., CESE
Asst. Schools Division Superintendent
OIC-Office of the Schools Division Superintendent

July 15, 2021
OLGA C. ALONSABE [OIC]
Schools Division Superintendent
El Salvador City

Sir/Madam,
Greetings of Peace!

The Math Olympiads Training League Incorporated (MOTLI) would like to invite your division to participate in our upcoming competition - Thailand International Mathematical Olympiad (TIMO) Heat Round 2021 - Philippine Region on the schedules indicated below.

| COMPETITION | TARGET | HEAT ROUND / FINAL |  |
| :---: | :---: | :---: | :---: |
| PARTICIPANTS | ROUND STAGE | HEAT/ <br> FINAL <br> ROUNDS <br> VENUE |  |
| Thailand International <br> Mathematical Olympiad (TIMO) | KINDERGARTEN <br> TO GRADE 12 | October 24, 2021 / <br> April 2-3, 2022 | ONLINE |

TIMO aims to:

- stimulate and foster young learners' interest in learning mathematics;
- strengthen the ability of their creative thinking;
- widen their International perspective, and promote the development of kindergarten, primary and secondary education and exchange of educational cultures throughout countries.

To prepare the student-participants, MOTLI offers Virtual Topic-Appropriate Mathematics Program and Simulation (VTAMPS V.5.0) - a 5-day online/virtual student-centered training and enhancement program open to all registered participants. Attendance to the said program is voluntary in nature and shall not be a requirement to join TIMO-Heat.

As partners of learning, MOTLI gives due recognition to schools and coaches based from the performances of their students.

## MATH OLYMPIAD'S TRAINING LEAGUE INC.

vve request your good office to help us in the dissemination of this information so that the Philippines can be represented by the best and finest Filipino math wizards in this international correspondence contest.

Medalists in the heat round will then be eligible to join the final round.
For full details, see the next pages.

For registration procedure, information and inquiries, please contact:
MOTLI Secretariat
0966-873-9643
Trunklines: 0961-6090686 / 0909-7205865 / 0967-6771501
Email: motlphilippines@gmail.com
Facebook Page: Math Olympiads Training League
Website: www.motliph.com

Thank you very much and more power!

Respectfully yours,


ENGR. KAREN SY
President
MOTLI

## SCHEDULE FOR THE VTAMPS V.4.0 REVIEW

|  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Mram |  | $=4$ A | 4 \% |
| DATE | Soplember 18, 20ed | Septernber 20, 2021 | Octoles 3, 2021 | Ootober 10, 2021 | Ostober 17, 20e1 |
| KNDEPG4TILN FFIMSFW 1 | $1300-120244$ $1300-12 \mathrm{CD} \mathrm{NN}$ | $1002-1200 \mathrm{H4}$ <br> 10.05-12.00 NW | $\begin{aligned} & 10: 20-12: 20 \mathrm{NN} \\ & 10: 50-12: 20 \mathrm{HN} \end{aligned}$ | $\begin{aligned} & 1000-1200 \mathrm{NH} \\ & +2000-\div 200 \mathrm{NH} \end{aligned}$ |  |
| गHuma | 12150-12150 M4 | 17im - $12 i 30 \mathrm{Hy}$ | 10:50-12504 +1N | 120601- 2150 NH | 1125D-1250 N , |
| FPIMPET 3 | 500 - 1000 ARS | 0002-1000 AM | ac0-10:0 AM | 203-1000 Am | 000-10:20 2 N |
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| SECONDNF 1 | $3.60-6.50 \mathrm{Pm}$ | $3.00 \cdot 2.00 \mathrm{FTA}$ | 800. - 500 PM | ax0-600 FW | S02-5.00 PPA |
| Secxvixhr 2 | $350 \mathrm{CO}-0 \mathrm{Cm}$ | 315-5401-M | $3002-6003+1 /$ | $3 \mathrm{K0}$ - 5050 FW | 202-sini 184 |
| 3E00NDNR"3 | $560 \mathrm{~F}, 50 \mathrm{FW}$ | 50087.00 Fld | $5005-700 \mathrm{PM}$ | $6 \times 0-760 \mathrm{FW}$ | 50.2700 PDA |
| 8FhWe FFCCNT:3FY | Fitc - $7: 50 \mathrm{FW}$ | 5if) Fimend | 5ill - 7 ml P/ | [E5- 7 EOFW | 5as - 7 mimPd |

PRIZES AND REWARDS
A. Students:

Students shall be recognized in the following categories

| AWARDS RECEIVED PER STUDENT | POINTS |
| :---: | :---: |
| GOLD | MEDAL AND CERTIFCATE |
| SILVER | MEDAL AND CERTIFCATE |
| BRONZE | MEDAL AND CERTIFCATE |
| MERIT | CERTIFICATE |
| PARTICIPATION | CERTIFICATE |

Additional recognition for top-performing students shall be given trophies based on the global rankings per grade level.

- Champion Trophy : the top scorer
- First and Second Runners Up Trophy: the 2nd top scorer and 3rd top scorer respectively.
- Perfect Scorer Trophy: perfect score
B. School/Coach:
- Most Outstanding School Award

Must produce (5) students with Gold awards

- Most Performing School Award

Able to encourage at least 20 students with ranging awards received from Gold to Merit Awards.

- Most Outstanding Teacher-Coach Award

A teacher-coach employed in a school institution that train students in at most 3
different year levels and accumulates 20 points based from the awards
received by his/her students per competition.

| POINT SYSTEM FOR OUTSTANDING TEACHER-COACH |  |
| :---: | :---: |
| AWARDS RECEIVED PER STUDENT | POINTS |
| GOLD | 5 |
| SILVER | 4 |
| BRONZE | 3 |
| MERIT | 2 |
| PARTICIPATION | 1 |

## Thailand International Mathematical Olympiad Syllabus

Kindergarten Group

| Topics |  |  |
| :---: | :--- | :--- |
|  | $>$ | Balance Problem |
|  | $>$ | Basic Number Pattern |
|  | $>$ | Basic Number Sequence |
|  | $>$ | Basic Figure Pattern |
|  | $>$ | IQ Age Problem |
|  | $>$ | IQ Date Problem |
|  | $>$ | Smart Addition on 1-digit numbers |
|  | $>$ | Addition on 1-digit numbers with carrying |
|  | $>$ | Addition on 2-digit numbers without carrying |
| Arithmetic | $>$ | Smart Subtraction on 1-digit numbers |
|  | $>$ | Subtraction on 1-digit numbers with carrying |
|  | $>$ | Subtraction on 2-digit numbers without carrying |
|  | $>$ | Balance on an equation |
|  | $>$ | Introduction on Odd \& Even numbers |
|  | $>$ | Mathematical Leveling |
| Number Theory |  |  |
|  | $>$ | Basic Fibonacci Series |
|  | $>$ | Match Equation |
|  | $>$ | Basic Number Pattern |
|  | $>$ | Simple Number Distribution |
|  | $>$ | Counting on 2-D Figures \& 3-D Figures |
|  | $>$ | Counting on number of sides \& interior angles |
|  | $>$ | Distinction on 2-D Figures |
|  | $>$ | Basic Figure Pattern |
|  | $>$ | Arranging the numbers in orders |
|  | $>$ | Simple Distribution |
|  | $>$ | Counting on specific numbers |
|  | $>$ | Formation of a 3-digit number |
|  | $>$ | Comparison on magnitude of 2-digit numbers |

## Thailand International Mathematical Olympiad Syllabus

| Primary Group |  |  |  |
| :---: | :---: | :---: | :---: |
| Topics | Primary 1 | Primary 2 | Primary 3 |
| Logical Thinking | $>$ Balance Problem <br> Basic Number Pattern \& Sequence <br> Basic Figure Pattern <br> IQ Age Problem \& Date Problem <br> Guess on 2-digit numbers | $>$ Balance Problem <br> $>$ Basic Number Pattern \& Sequence <br> $>$ Basic Figure Pattern <br> $>$ IQ Age Problem \& Date Problem <br> $>$ Guess on 2-digit numbers | $>$ Periodic Problem <br> $>$ Advanced Figure Pattern <br> $>$ IQ Age Problem \& Date Problem <br> $>$ Guess on 3-digit numbers <br> $>$ Basic Pigeonhole Principle |
| Arithmetic | Smart Addition on 1-digit numbers with carrying <br> Smart Subtraction on 1 to 2-digit numbers with carrying <br> Multiplication on 1 to 2-digit numbers without carrying <br> Balance on an equation | Smart Addition on 2-digit numbers with carrying <br> Smart Subtraction on 1 to 2-digit numbers with carrying <br> Multiplication on 2-digit numbers with carrying <br> Balance on an equation | Gaussian Addition <br> Smart Addition on 3-digit numbers with carrying <br> Smart Subtraction on 3-digit numbers with carrying <br> Multiplication on 3-digit numbers |
| Number Theory | Introduction on Odd \& Even <br> Mathematical Leveling <br> Advanced Fibonacci Series <br> Match Equation <br> Basic Arithmetic Pattern | $>$ Introduction on Odd \& Even <br> $>$ Mathematical Leveling <br> > Advanced Fibonacci Series <br> > Match Equation <br> $>$ Basic Arithmetic Pattern | > Introduction on prime numbers <br> $>$ Sum, Difference \& Multiples <br> $>$ Arithmetic Operation <br> $>$ Basic Arithmetic Pattern <br> $>$ Simple Divisibility |
| Geometry | Counting on number of 2-D \& 3-D <br> Figures <br> Counting on number of sides \& interior angles <br> Distinction on 2-D Figures <br> Basic Figure Pattern | Counting on number of 2-D \& 3-D Figures <br> Counting on number of sides \& interior angles <br> Distinction on 2-D Figures <br> Basic Figure Pattern | Counting on number of 2-D Figures Counting on Vertices, Faces \& Edges of 3-D Figures <br> Observations about 3-D Figures <br> Basic Concept about Area \& Perimeter <br> Relationship between Line Segments, Angles \& Figures |
| Combinatorics | > Seven Bridges of Königsberg Arranging numbers in orders <br> > Simple Distribution <br> $>$ Counting on specific numbers <br> $>$ Formation of a 3-digit number | Arranging numbers in orders Simple Distribution <br> $>$ Counting on specific numbers <br> $>$ Formation of a 3-digit number <br> $>$ Simple Combination | Basic Routing Problem <br> Advanced Distribution <br> $>$ Counting on specific numbers <br> $>$ Formation of a 3-digit number <br> $>$ Excess and Deficiency |

## Thailand International Mathematical Olympiad Syllabus

| Topics | Primary 4 | Primary 5 | Primary 6 |
| :---: | :---: | :---: | :---: |
| Logical Thinking | $>$ Periodic Problem <br> > Advanced Figure Pattern <br> $>$ Chicken Rabbit Theorem <br> $>$ Guess on 3-digit numbers <br> $>$ Basic Pigeonhole Principle | Chicken Rabbit Theorem <br> Speed, Distance \& Time Problem Guess on 4-digit numbers by given number properties Advanced Pigeonhole Principle | Construction Problem <br> Speed, Distance \& Time Problem Guess on 4-digit numbers by given number properties Advanced Pigeonhole Principle |
| Arithmetic | Gaussian Addition <br> Smart Addition on 4-digit numbers with carrying <br> Smart Subtraction on 4-digit numbers with carrying <br> Multiplication on 3-digit numbers | Advanced Gaussian Addition <br> Smart Calculation on Decimals \& Fractions <br> Sum of a series of square numbers <br> Method of Difference equations <br> Smart Addition on 5-digit numbers with carrying | Advanced Gaussian Addition Smart Calculation on Fractions Sum of a series of square numbers Sum of a series of cubic numbers Method of Difference equations Sum of Geometric Sequence |
| Number Theory | $>$ Introduction on prime numbers <br> $>$ Sum, Difference \& Multiples <br> > Arithmetic Operation <br> $>$ Relationship between L.C.M \& H.C.F <br> $>$ Simple Divisibility | Advanced Divisibility <br> Number of positive factors Sum of all positive factors Unit digit of a series of $n$-digit numbers | $>$ Advanced Divisibility <br> $>$ Number of positive factors <br> $>$ Sum of all positive factors <br> $>$ Unit digit of a series of $n$-digit numbers |
| Geometry | Counting on number of 2-D Figures Counting on Vertices, Faces \& Edges of 3-D Figures <br> Observations about 3-D Figures <br> Basic Concept about Area \& Perimeter <br> Relationship between Line Segments, Angles \& Figures | $>\quad$ Area \& Perimeter of 2-D Figures <br> $>$ Ratio of Area of 2-D Figures <br> > Volume \& Surface Area of 3-D Figures <br> $>$ Counting on number of 2-D Figures <br> > Relationship between Line Segments, Angles \& Figures | Area \& Perimeter of 2-D Figures <br> Ratio of Area of 2-D Figures <br> Volume \& Surface Area of 3-D Figures <br> Area of circle \& Circumstance <br> Relationship between Line Segments, Angles \& Figures |
| Combinatorics | > Basic Routing Problem <br> $>$ Advanced Distribution <br> $>$ Counting on specific numbers <br> $>$ Formation of a 3-digit number <br> $>$ Excess and Deficiency | > Advanced Pigeonhole Principle <br> > Advanced Routing Problem <br> $>$ Combinations \& Permutations <br> $>$ Principle of Inclusion and Exclusion <br> $>$ Excess and Deficiency | > Advanced Pigeonhole Principle <br> > Advanced Routing Problem <br> $>$ Combinations \& Permutations <br> $>$ Principle of Inclusion and Exclusion <br> > Simple Probability |

## Thailand International Mathematical Olympiad Syllabus

Secondary Group

| Topics | Secondary 1 | Secondary 2 |
| :---: | :---: | :---: |
| Logical Thinking | Advanced Periodic Problems <br> Speed, Distance \& Time Problem <br> $>$ Advanced Pigeonhole Principle <br> $>$ Guess on 4-digit numbers <br> $>$ Relationship between mean, median \& sum | Advanced Pigeonhole Principle <br> Guess on 4-digit numbers <br> $>$ Relationship between mean, median \& sum <br> $>$ Advanced Distributions <br> $>$ Advanced Periodic Problems |
| Algebra | Operation on directed numbers <br> Algebraic expression <br> Linear Equations <br> Introduction on Absolute Value <br> Simplification on surd form <br> Euclidean Algorithm | Algebraic expression <br> Factorization <br> Introduction on Absolute Value <br> Simplification on surd form <br> Euclidean Algorithm <br> Introduction on Inequalities |
| Number Theory | Advanced problems on Prime Numbers <br> Counting on possible solution(s) on Indefinite equations <br> Introduction on repeating surd forms <br> Sum of all Digits <br> Relationship between L.C.M \& H.C.F | Periodic remainder problems <br> Counting on possible solution(s) on Indefinite equations <br> Introduction on repeating surd forms <br> Extreme values of a polynomial <br> Factor Theorem |
| Geometry | Usage of Pythagorean theorem <br> Characteristics of Congruent Triangles \& Similar Triangles <br> Area of circle \& Circumstance <br> Relationship between Line Segments, Angles \& Figures <br> Knowledge on Rectangular Coordinate System <br> Volume \& Surface Area of 3-D Figures | Advanced usage of Pythagorean theorem <br> Characteristics of Congruent Triangles \& Similar Triangles <br> Triangle Inequality <br> Relationship between Line Segments, Angles \& Figures <br> Knowledge on Rectangular Coordinate System <br> Concepts about angle bisectors |
| Combinatorics | Advanced Pigeonhole Principle <br> Advanced Routing Problem <br> Combinations \& Permutations <br> Principle of Inclusion and Exclusion <br> Simple Probability <br> Triangle Inequality | Advanced Pigeonhole Principle <br> Advanced Routing Problem <br> Combinations \& Permutations <br> Principle of Inclusion and Exclusion <br> Simple Probability <br> Counting on Like \& Unlike Terms of a polynomial |

## Thailand International Mathematical Olympiad Syllabus

| Topics | Secondary 3 | Senior Secondary Group (S4-S6 in ONE group) |
| :---: | :---: | :---: |
| Logical Thinking | > Advanced Pigeonhole Principle <br> $>$ Guess on 4-digit numbers <br> > Relationship between mean, median \& sum <br> > Advanced Distributions <br> $>$ Advanced Periodic Problems | > Advanced Pigeonhole Principle <br> $>$ Guess on 5 -digit numbers <br> > Relationship between mean, median \& sum <br> $>$ Advanced Distributions <br> $>$ Advanced Periodic Problems |
| Algebra | $>$ Sum \& Product of roots of a quadratic equation <br> $>$ Algebraic expression <br> > Introduction on Absolute Value <br> $>$ Simplification on surd form <br> > Euclidean Algorithm <br> $>$ Introduction on Inequalities | $>$ Sum \& Product of roots of a quadratic equation <br> > Algebraic expression <br> > Introduction on Absolute Value <br> > Simplification on surd form <br> $>$ Euclidean Algorithm <br> $>$ Introduction on Inequalities |
| Number Theory | > Periodic remainder problems <br> $>$ Counting on possible solution(s) on Indefinite equations <br> > Introduction on repeating surd forms <br> $>$ Extreme values of a polynomial <br> > Modular Arithmetic | $>$ Periodic remainder problems <br> > Counting on possible solution(s) on Indefinite equations <br> > Introduction on repeating surd forms <br> > Extreme values of a polynomial <br> > Modular Arithmetic <br> > Introduction on complex numbers |
| Geometry | $>$ Advanced usage of Pythagorean theorem <br> > Menelaus' Theorem <br> $>$ Relationship between Line Segments, Angles \& Figures <br> $>$ Advanced knowledge on Rectangular Coordinate System <br> $>$ Trigonometry | > Advanced knowledge on Rectangular Coordinate System <br> > Menelaus' Theorem <br> > Relationship between Line Segments, Angles \& Figures <br> $>$ Circumcentre, Incentre, Centroid \& Orthocentre <br> $>$ Trigonometry |
| Combinatorics | > Advanced Pigeonhole Principle <br> $>$ Combinations \& Permutations <br> $>$ Principle of Inclusion and Exclusion <br> $>$ Advanced Probability <br> > Counting on Like \& Unlike Terms of a polynomial | $>$ Advanced Pigeonhole Principle <br> > Combinations \& Permutations <br> $>$ Principle of Inclusion and Exclusion <br> > Advanced Probability <br> > Counting on Like \& Unlike Terms of a polynomial |

