

SOF INTERNATIONAL MATHEMATICS OLYMPIAD

# Level 2

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## SOLVED PAPERS

5 Years (2014, 2016-2019)

CLASS

4



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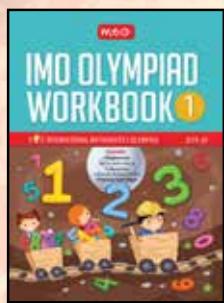
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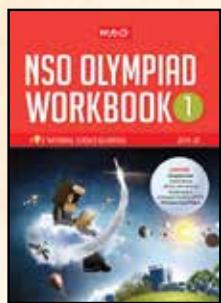
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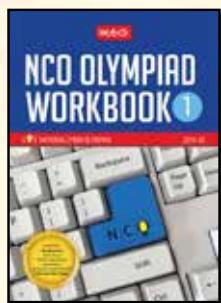
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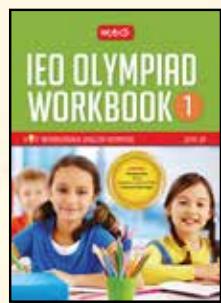
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National Science Olympiad



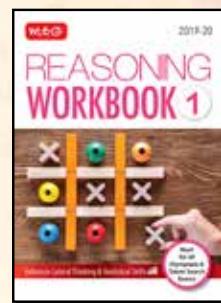
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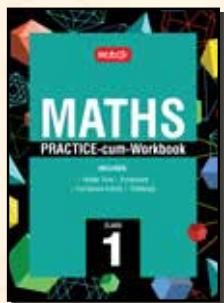
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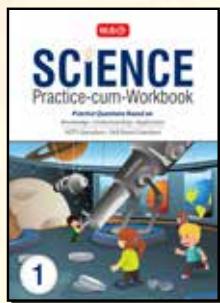
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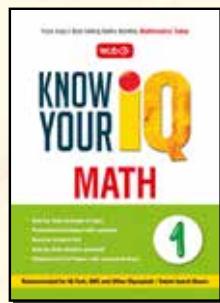
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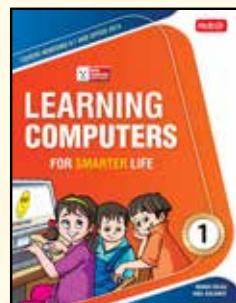
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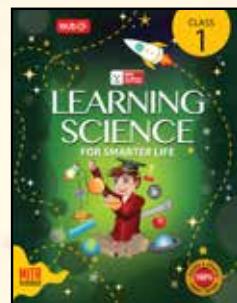
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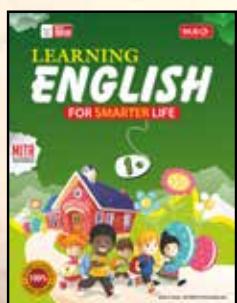
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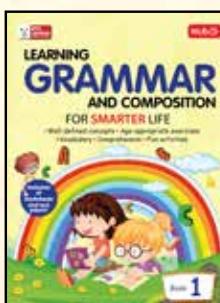
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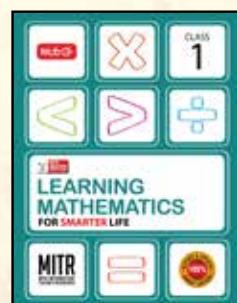
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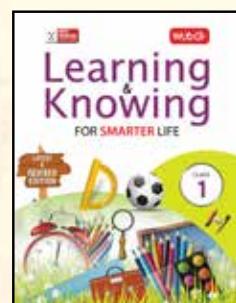
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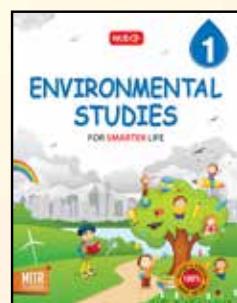
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Learning Mathematics



Learning & Knowing



EVS

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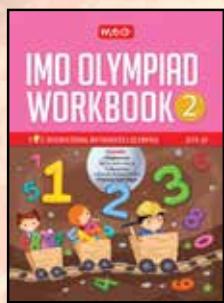
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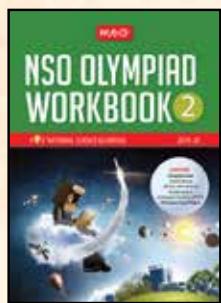
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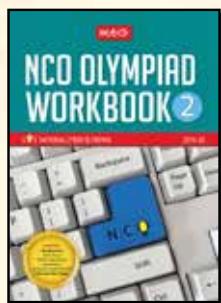
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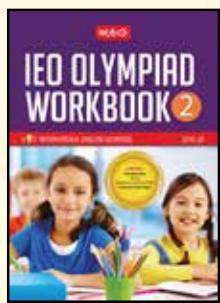
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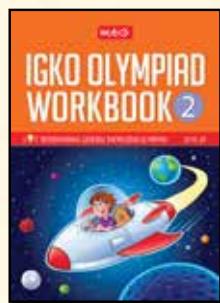
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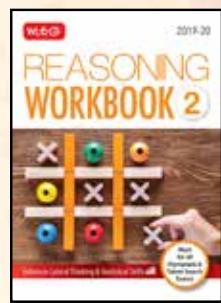
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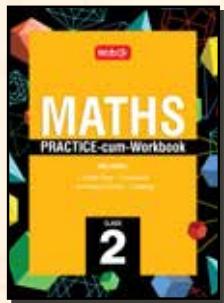
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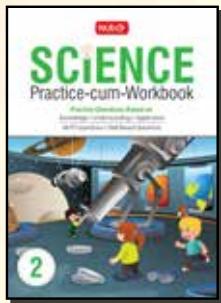
International General Knowledge Olympiad



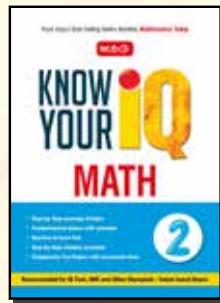
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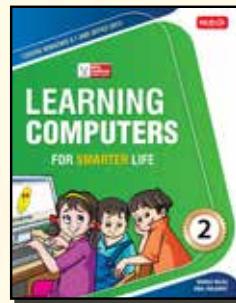
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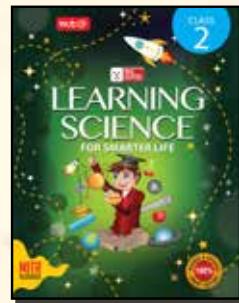
Science Practice-cum-Workbook



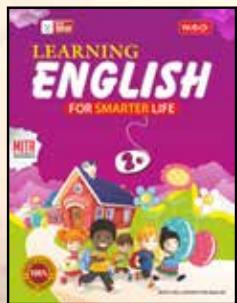
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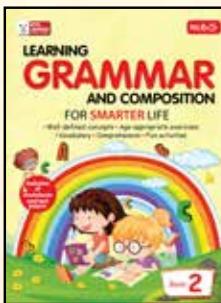
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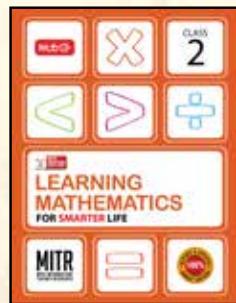
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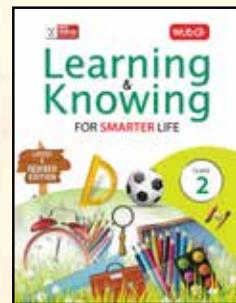
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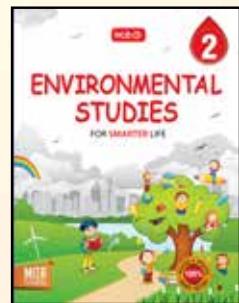
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Learning Mathematics



Learning & Knowing



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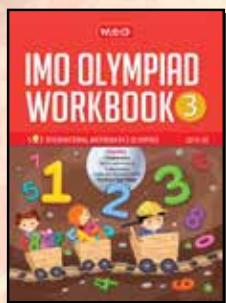
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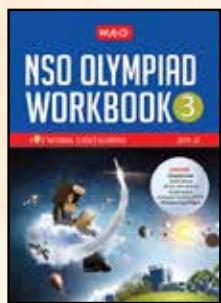
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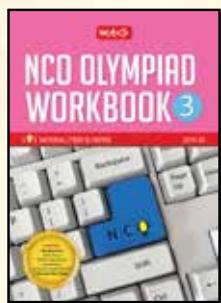
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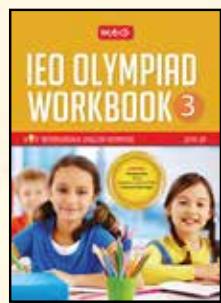
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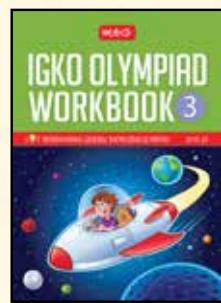
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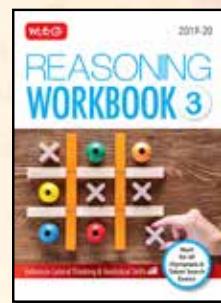
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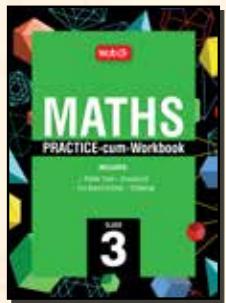
International English Olympiad



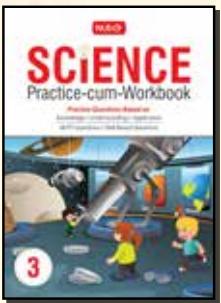
International General Knowledge Olympiad



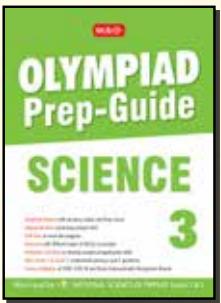
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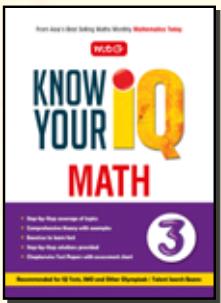
Maths Practice-cum-Workbook



Science Practice-cum-Workbook



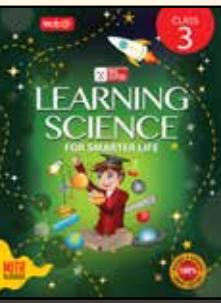
Olympiad Prep-Guide Science



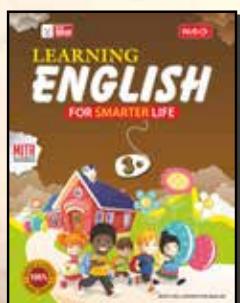
Know Your IQ Math



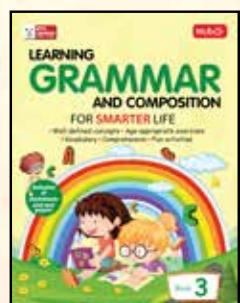
Learning Computers



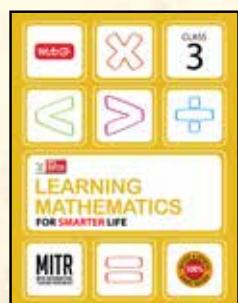
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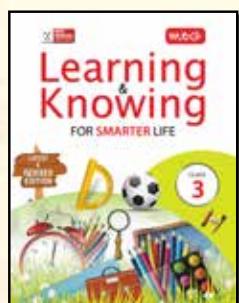
Learning English



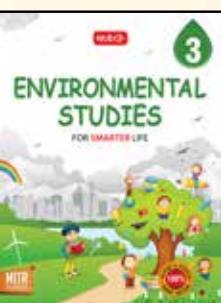
Learning Grammar



Learning Mathematics



Learning & Knowing



EVS

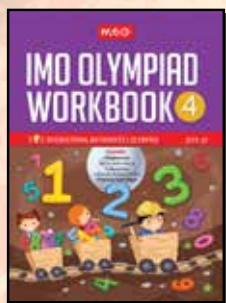
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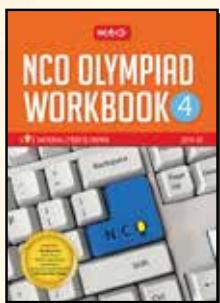
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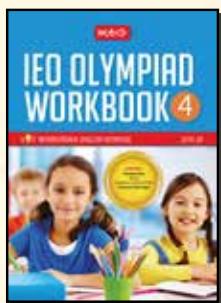
International Mathematics Olympiad



National Science Olympiad



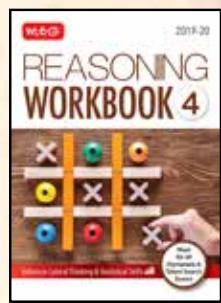
National Cyber Olympiad



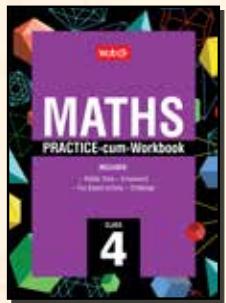
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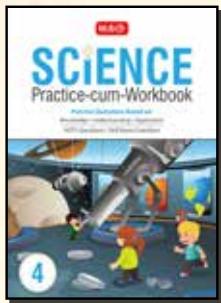
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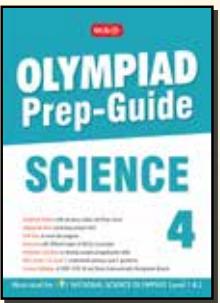
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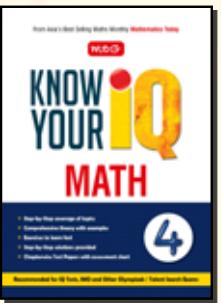
Maths Practice-cum-Workbook



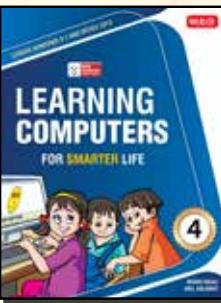
Science Practice-cum-Workbook



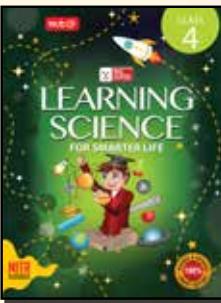
Olympiad Prep-Guide Science



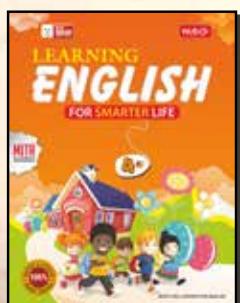
Know Your IQ Math



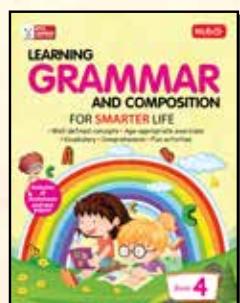
Learning Computers



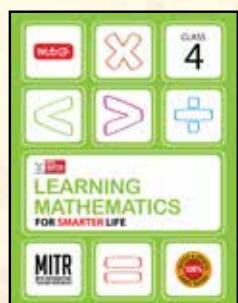
Learning Science



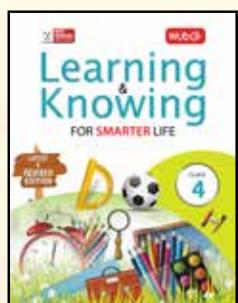
Learning English



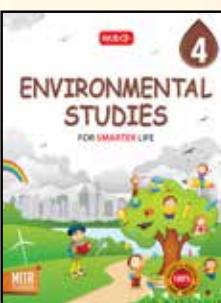
Learning Grammar



Learning Mathematics



Learning & Knowing



EVS

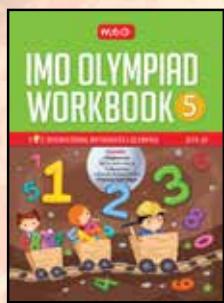
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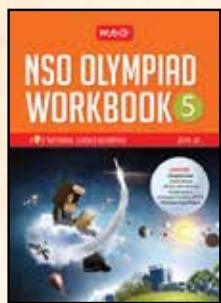
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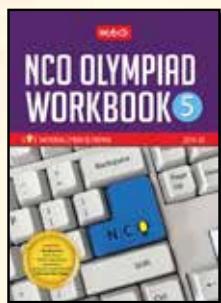
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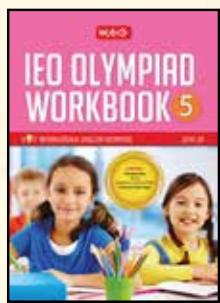
International Mathematics Olympiad



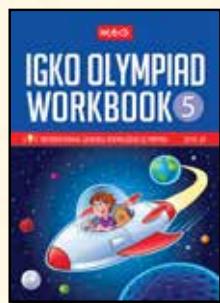
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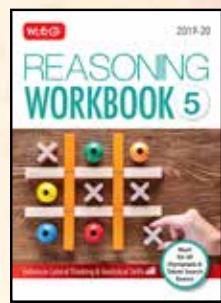
National Cyber Olympiad



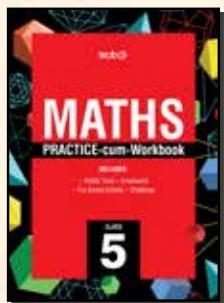
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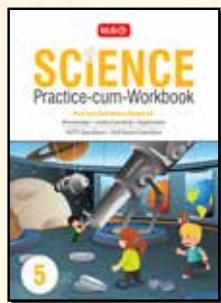
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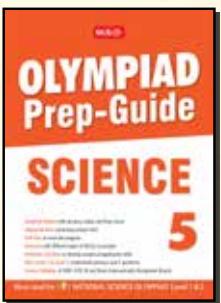
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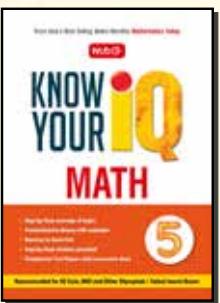
Maths Practice-cum-Workbook



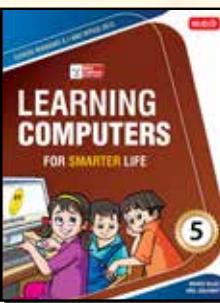
Science Practice-cum-Workbook



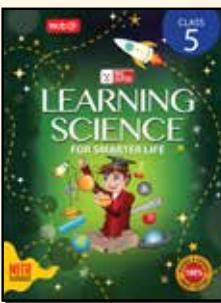
Olympiad Prep-Guide Science



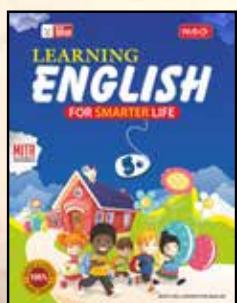
Know Your IQ Math



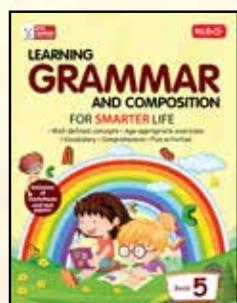
Learning Computers



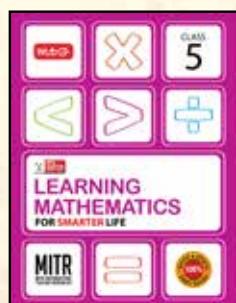
Learning Science



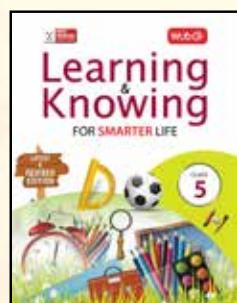
Learning English



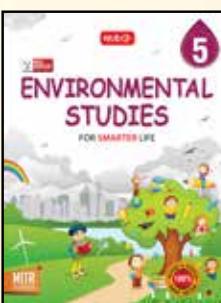
Learning Grammar



Learning Mathematics



Learning & Knowing



EVS

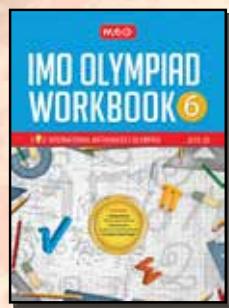
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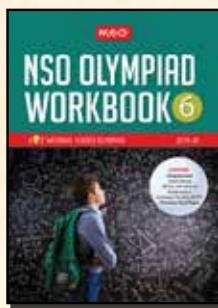
## CLASS 6

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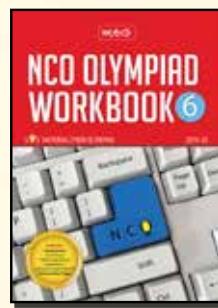
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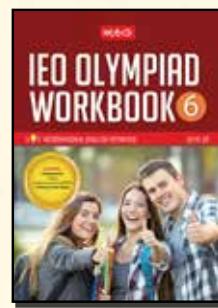
International Mathematics Olympiad



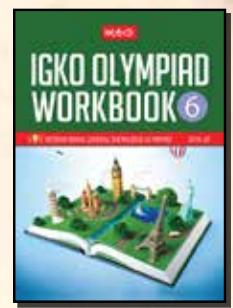
National Science Olympiad



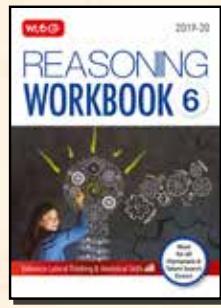
National Cyber Olympiad



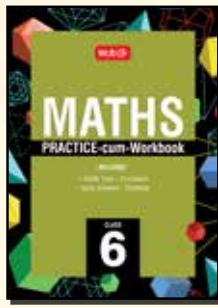
International English Olympiad



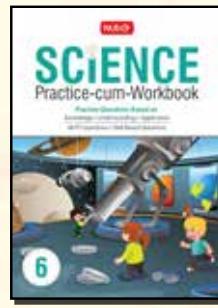
International General Knowledge Olympiad



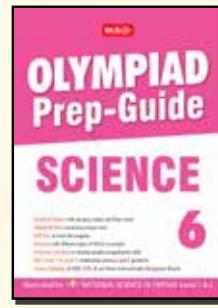
Reasoning



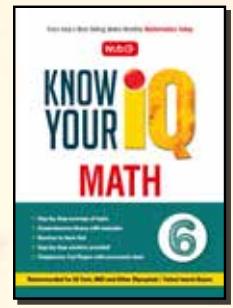
Maths Practice-cum-Workbook



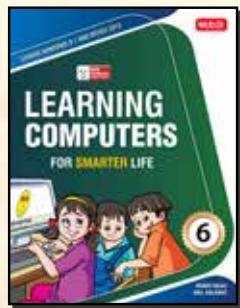
Science Practice-cum-Workbook



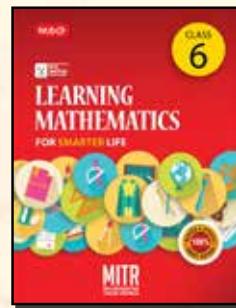
Olympiad Prep-Guide Science



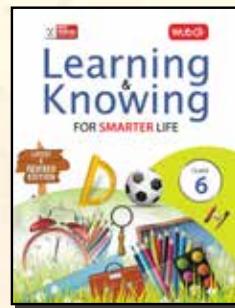
Know Your IQ Math



Learning Computers



Learning Mathematics



Learning & Knowing



NCERT at your Fingertips

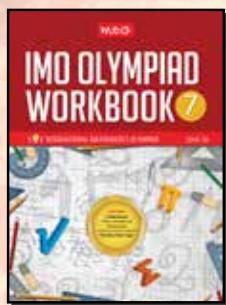
# MTG WORKBOOKS / OLYMPIAD BOOKS

**Check complete details on [www.mtg.in](http://www.mtg.in)**

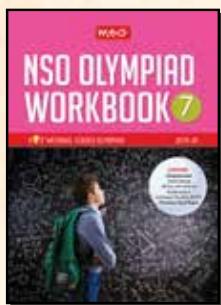
## CLASS 7

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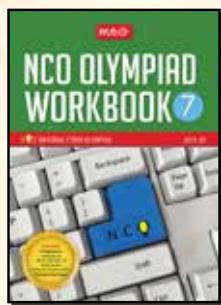
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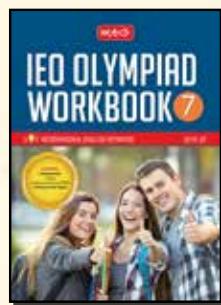
International Mathematics Olympiad



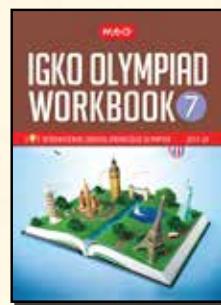
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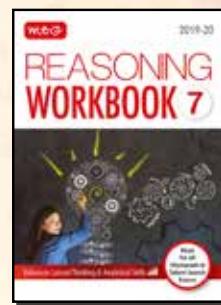
National Cyber Olympiad



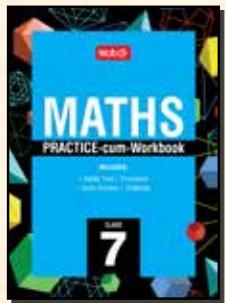
International English Olympiad



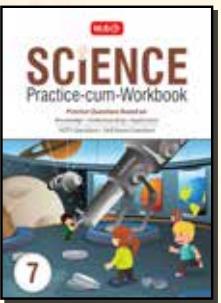
International General Knowledge Olympiad



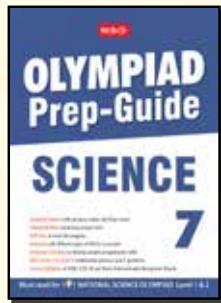
Reasoning



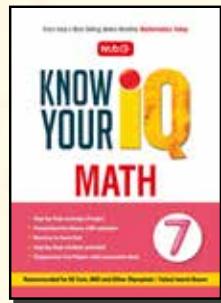
Maths Practice-cum-Workbook



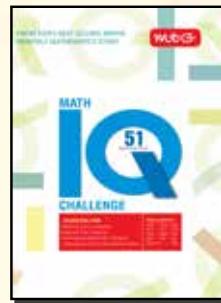
Science Practice-cum-Workbook



Olympiad Prep-Guide Science



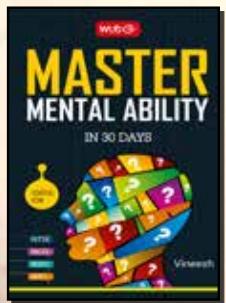
Know Your IQ Math



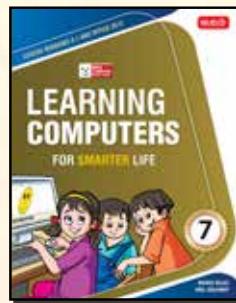
Math IQ Challenge



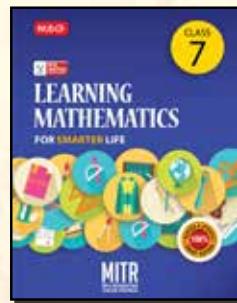
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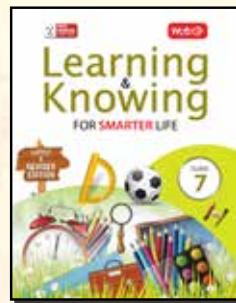
Master Mental Ability in 30 Days



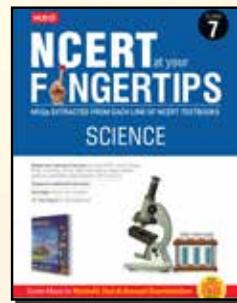
Learning Computers



Learning Mathematics



Learning & Knowing



NCERT at your Fingertips

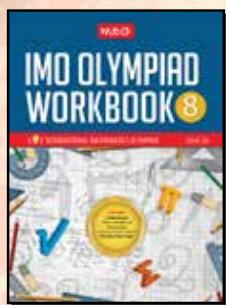
# MTG WORKBOOKS / OLYMPIAD BOOKS

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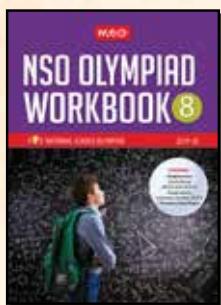
## CLASS 8

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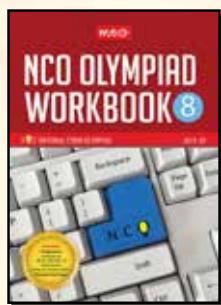
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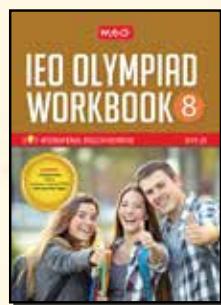
International Mathematics Olympiad



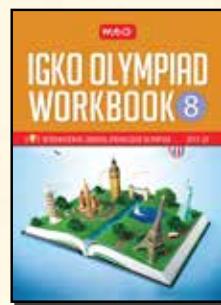
National Science Olympiad



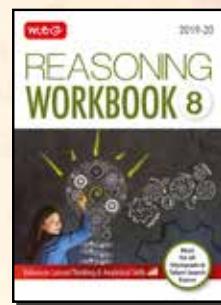
National Cyber Olympiad



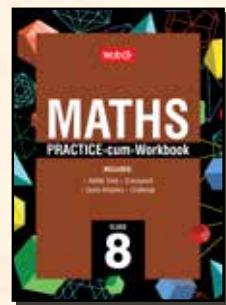
International English Olympiad



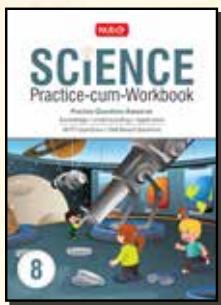
International General Knowledge Olympiad



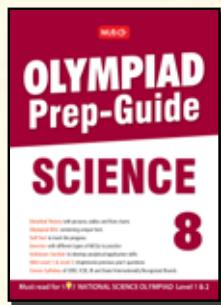
Reasoning



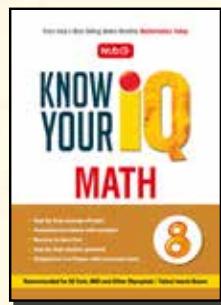
Maths Practice-cum-Workbook



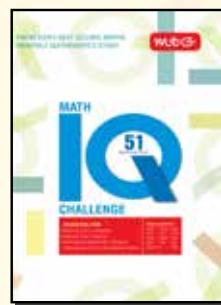
Science Practice-cum-Workbook



Olympiad Prep-Guide Science



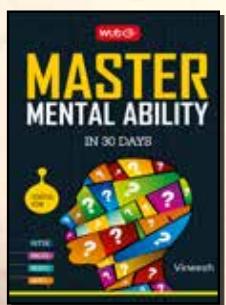
Know Your IQ Math



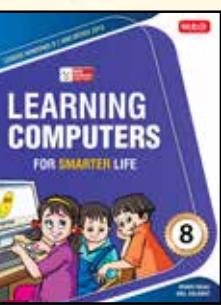
Math IQ Challenge



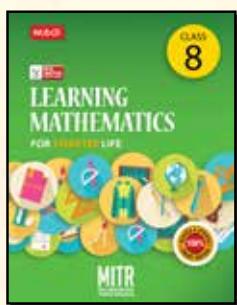
Science IQ Challenge



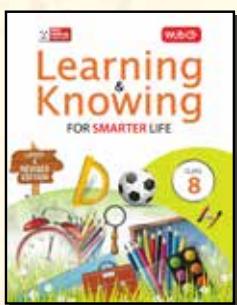
Master Mental Ability in 30 Days



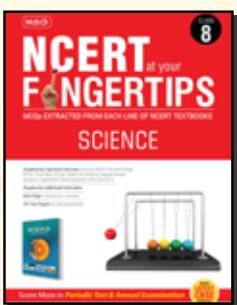
Learning Computers



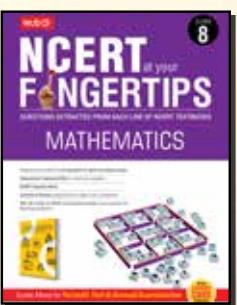
Learning Mathematics



Learning & Knowing



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NCERT at your Fingertips Mathematics

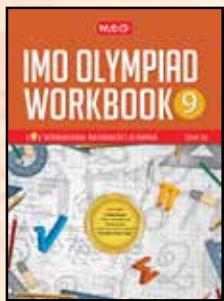
# MTG WORKBOOKS / OLYMPIAD BOOKS

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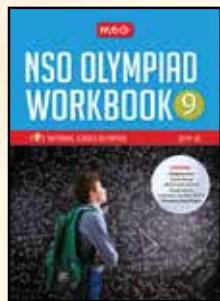
## CLASS 9

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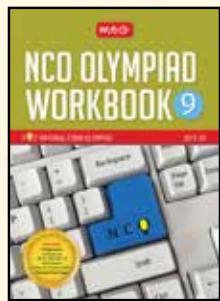
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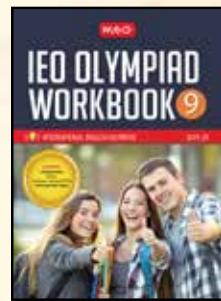
International Mathematics Olympiad



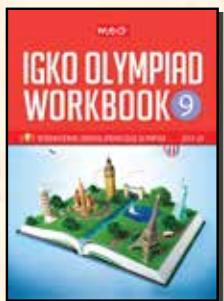
National Science Olympiad



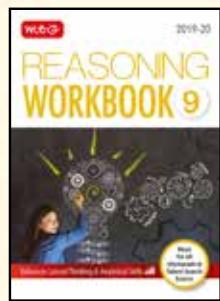
National Cyber Olympiad



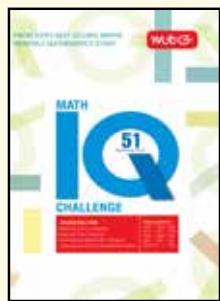
International English Olympiad



International General Knowledge Olympiad



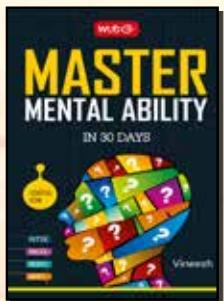
Reasoning



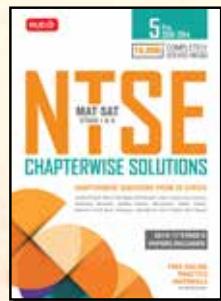
Math IQ Challenge



Science IQ Challenge



Master Mental Ability in 30 Days



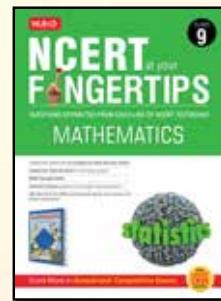
NTSE Chapterwise



NTSE Explorer



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NCERT at your Fingertips Mathematics

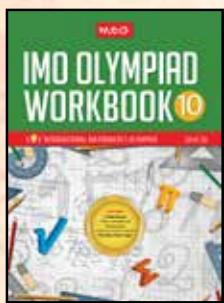
# MTG WORKBOOKS / OLYMPIAD BOOKS

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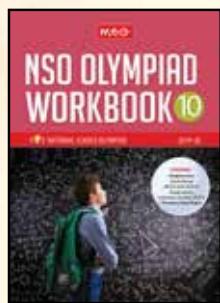
## CLASS 10

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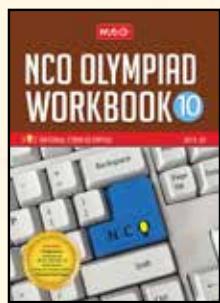
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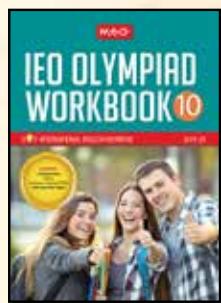
International  
Mathematics  
Olympiad



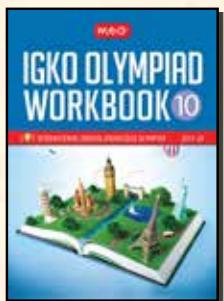
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Science  
Olympiad



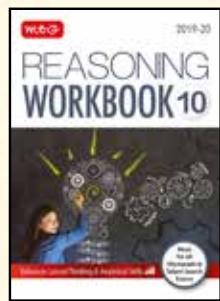
National Cyber  
Olympiad



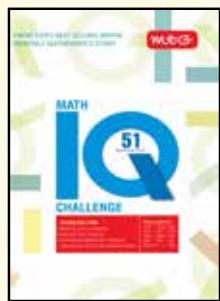
International  
English  
Olympiad



International  
General Knowledge  
Olympiad



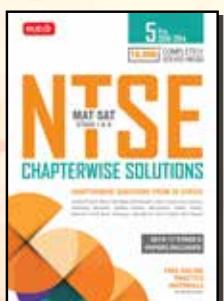
Reasoning



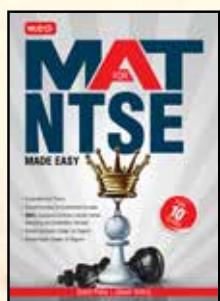
Math IQ  
Challenge



Science IQ  
Challenge



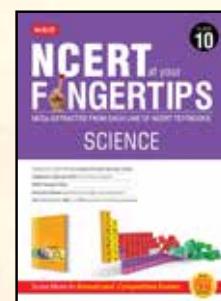
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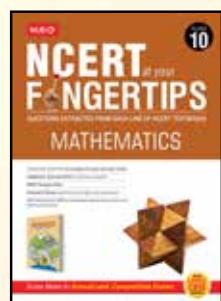
MAT for NTSE



NTSE Explorer



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Fingertips Science



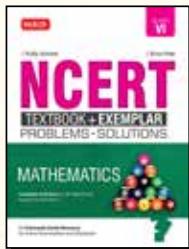
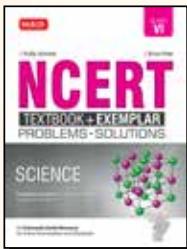
NCERT at your  
Fingertips Mathematics

# NCERT

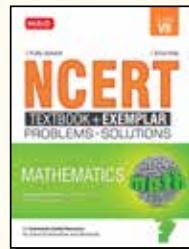
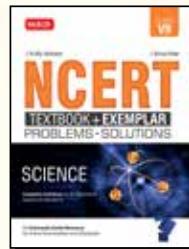
## TEXTBOOK + EXEMPLAR PROBLEMS-SOLUTIONS

For Classes 6, 7, 8, 9, 10, 11 & 12

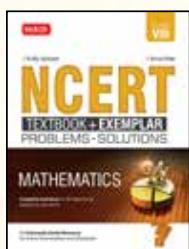
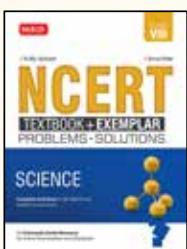
Class 6



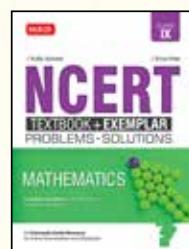
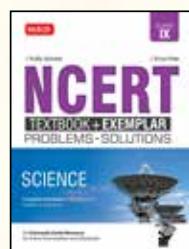
Class 7



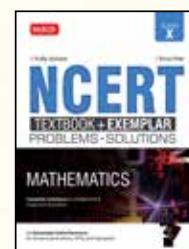
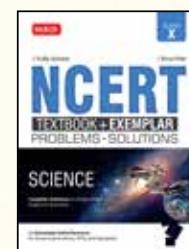
Class 8



Class 9

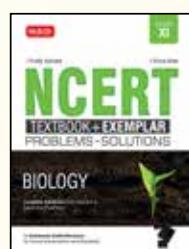
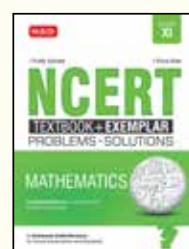
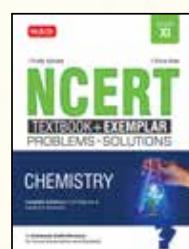
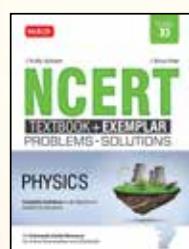


Class 10



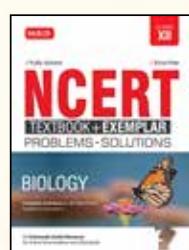
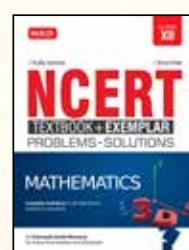
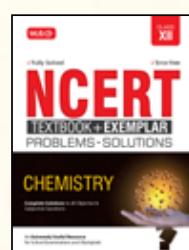
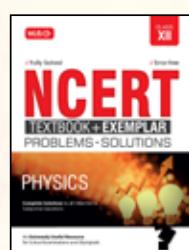
11

Class



12

Class

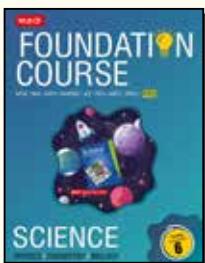
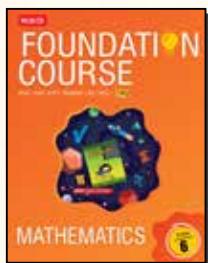


JEE (Main &amp; Advanced) | NEET | BOARDS | OLYMPIAD | NTSE

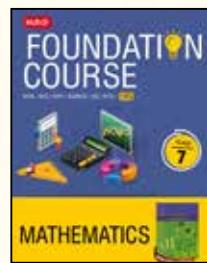
# FOUNDATION COURSE

For Classes 6, 7, 8, 9 &amp; 10

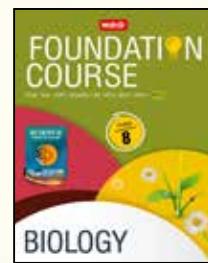
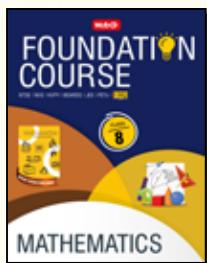
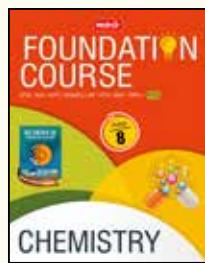
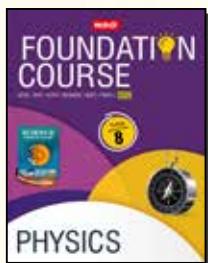
Class 6



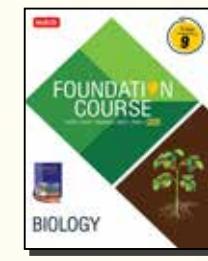
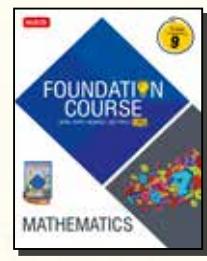
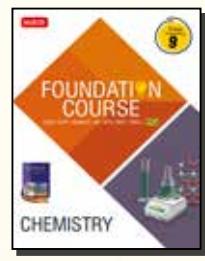
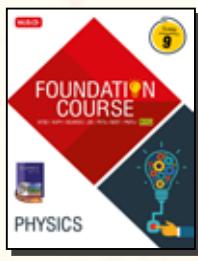
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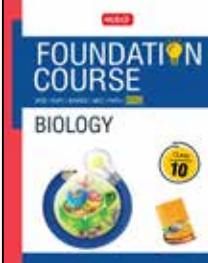
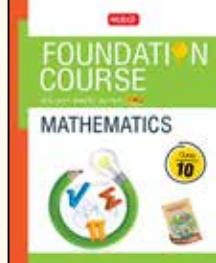
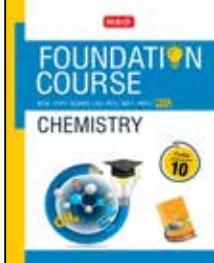
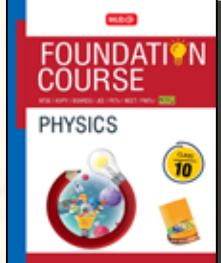
Class 8



Class 9



Class 10



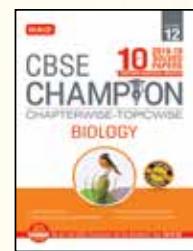
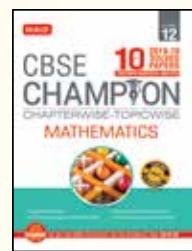
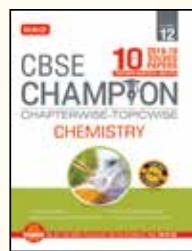
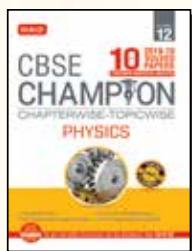
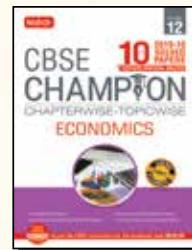
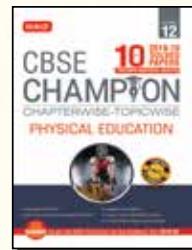
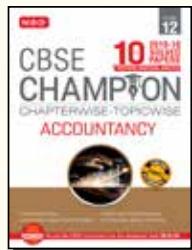
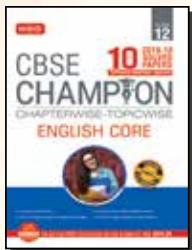
# CBSE CHAMPION

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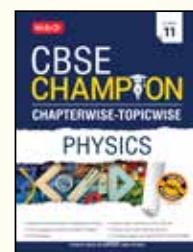
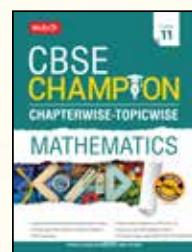
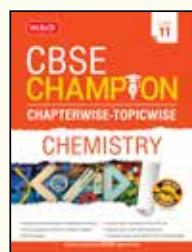
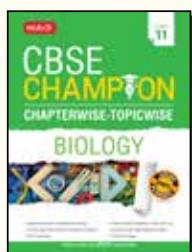
## CHAPTERWISE-TOPICWISE

For Classes 10, 11 and 12

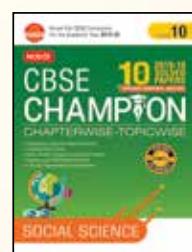
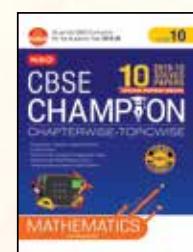
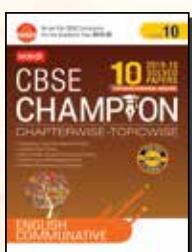
### Class 12



### Class 11



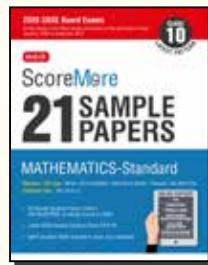
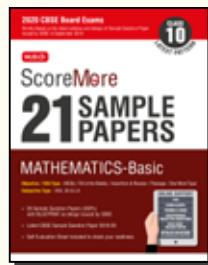
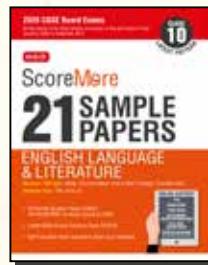
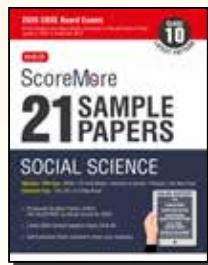
### Class 10



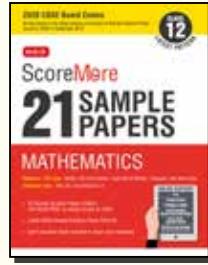
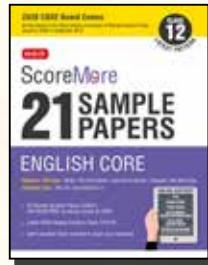
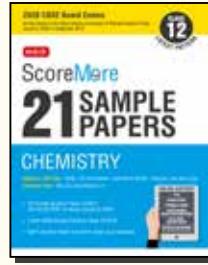
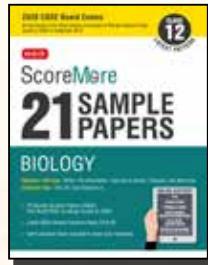
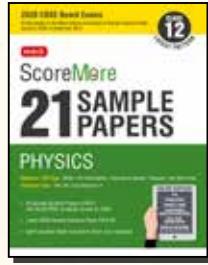
# ScoreMore 21 SAMPLE PAPERS

For Classes 10 & 12

## Class 10



## Class 12

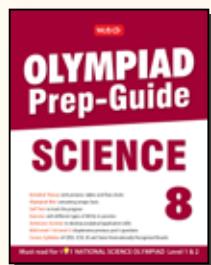
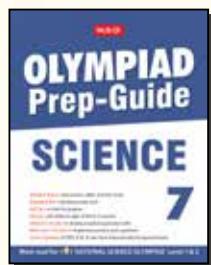
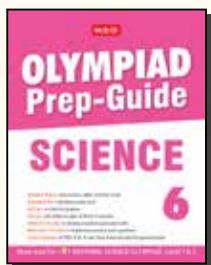
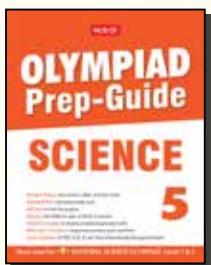
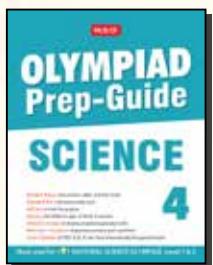
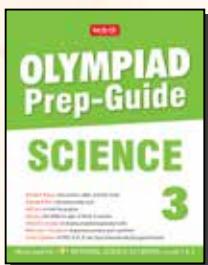


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NEW  
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# OLYMPIAD Prep-Guide

For Classes 3 to 8

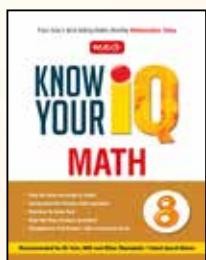
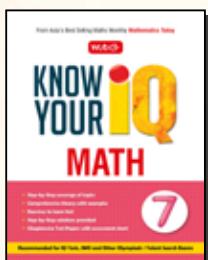
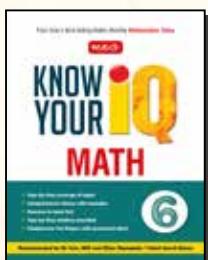
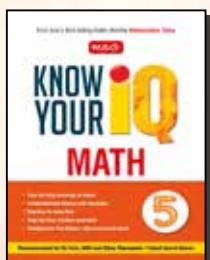
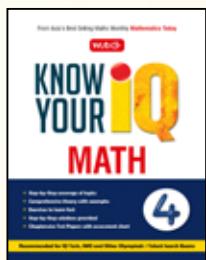
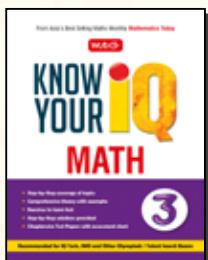
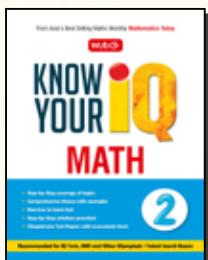
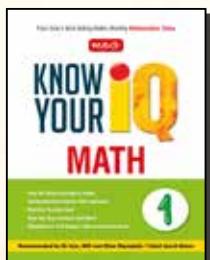


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For Classes 1 to 8

NEW  
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# KNOW YOUR iq MATH



## **IMPORTANT INSTRUCTIONS**

**Exam Date :** 9<sup>th</sup> February 2020

**Center of exam :** As assigned by SOF on your admit card. Kindly coordinate with your school coordinator for exact information about exam. Write to [info@sofworld.org](mailto:info@sofworld.org) for any enquiry.

**Mode of exam :** IEO/NSO/IMO level 2 for academic year 2019-20 will be a paper-pen objective test.

**Pattern of the exams :**

### **NATIONAL SCIENCE OLYMPIAD**

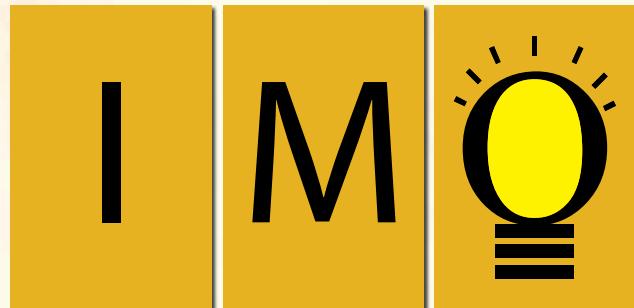
<b>Class</b>	<b>Section</b>	<b>No. of Questions</b>	<b>Marks per Question</b>	<b>Total Marks</b>
3 to 4	Science	30	1	30
	Achievers Section	5	2	10
	Grand Total	35		40
5 to 10	Science	45	1	45
	Achievers Section	5	3	15
	Grand Total	50		60
11 and 12	Physics & Chemistry	25	1	25
	Achievers Section	5	3	15
	Mathematics/Biology	20	1	20
	Grand Total	50		60

### **INTERNATIONAL MATHEMATICS OLYMPIAD**

<b>Class</b>	<b>Section</b>	<b>No. of Questions</b>	<b>Marks per Question</b>	<b>Total Marks</b>
3 to 4	Mathematics	30	1	30
	Achievers Section	5	2	10
	Grand Total	35		40
5 to 12	Mathematics	45	1	45
	Achievers Section	5	3	15
	Grand Total	50		60

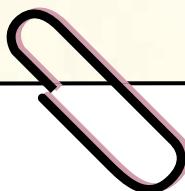
### **INTERNATIONAL ENGLISH OLYMPIAD**

<b>Class</b>	<b>Section</b>	<b>No. of Questions</b>	<b>Marks per Question</b>	<b>Total Marks</b>
3 to 4	Word and Structure Knowledge, Reading	30	1	30
	Achievers Section	5	2	10
	Grand Total	35		40
5 to 12	Word and Structure Knowledge, Reading	45	1	45
	Achievers Section	5	3	15
	Grand Total	50		60



## CLASS 4

# Contents



- ➲ IMO - Level-2 (2014)
- ➲ IMO - Level-2 was an online exam. (2015)
- ➲ IMO - Level-2 (2016)
- ➲ IMO - Level-2 (2017)
- ➲ IMO - Level-2 (2018)
- ➲ IMO - Level-2 (2019)



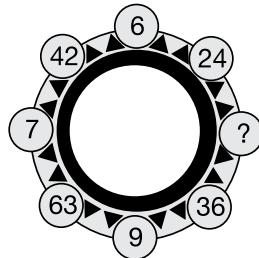
**LEVEL - 2**

**Year 2013-14**

## LOGICAL REASONING

1. What is the missing number?

- A. 2
- B. 4
- C. 5
- D. 8



2. At a fair, every 6<sup>th</sup> person was given a pen and every 10<sup>th</sup> person was given a book. What was the position of the first person who received both a pen and a book?

- A. 20<sup>th</sup>
- B. 30<sup>th</sup>
- C. 60<sup>th</sup>
- D. 15<sup>th</sup>

3. Some letters are given which are numbered 1, 2, 3, 4, 5 and 6. Find that combination of numbers so that letters arranged accordingly form a meaningful word.

E Q U A R S  
1 2 3 4 5 6

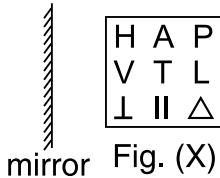
- A. 6, 2, 3, 4, 5, 1
- B. 1, 2, 4, 5, 3, 6
- C. 6, 3, 2, 4, 1, 5
- D. 1, 6, 5, 4, 3, 2

4. Which one word CANNOT be made from the letters of the given word?

INTELLIGENCE

- A. CANCEL
- B. INCITE
- C. GENTLE
- D. NEGLECT

5. Select the correct mirror image of the fig. (X).



- A. 

H	V	P
V	T	L
T	I	A
- B. 

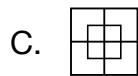
H	A	Q
V	T	L
T	I	A
- C. 

H	A	Q
A	T	L
T	I	A
- D. 

Q	A	H
J	T	V
A	I	T

Space for Rough Work

6. If  means ,  means  and  means , then which figure is formed by exactly 10 straight lines?



7. How many more sleeping lines than the vertical lines are there in the given letters?

- A. 10  
B. 9  
C. 7  
D. 8



8. Which of the following parts is NOT embedded in the figure (X)?

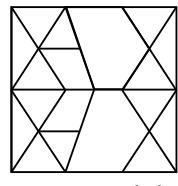
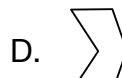
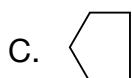
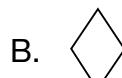
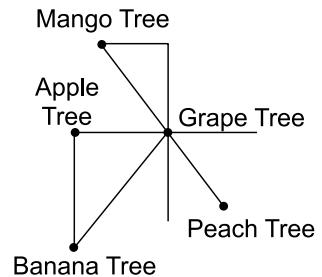


Figure (X)

9. Study the adjoining diagram to answer the question given below.

Grape tree is south-east of \_\_\_\_\_.

- A. Mango tree  
B. Peach tree  
C. Apple tree  
D. Banana tree



10. There is a certain relationship between the pair of figures on the either side of ::. Identify the relationship and find the missing figure.



Space for Rough Work

## MATHEMATICAL REASONING

11. Arrange the following from the smallest to the greatest.

- |               |               |               |               |
|---------------|---------------|---------------|---------------|
| CDXXII        | DX            | DXXV          | DCII          |
| P             | Q             | R             | S             |
| A. P, Q, R, S | B. P, R, S, Q | C. P, R, Q, S | D. P, Q, S, R |
- 

12. Given below is the price list of three items. Latika wants to purchase the combination of 1 skirt, 1 top and 1 jacket. If she has only ₹ 3000, then which combination of skirt, top and jacket will she buy?

Skirt	Price	Top	Price	Jacket	Price
S <sub>1</sub>	₹ 2000	T <sub>1</sub>	₹ 1000	J	₹ 500
S <sub>2</sub>	₹ 1500	T <sub>2</sub>	₹ 1800		

- A. S<sub>1</sub> T<sub>2</sub> J      B. S<sub>1</sub> T<sub>1</sub> J      C. S<sub>2</sub> T<sub>2</sub> J      D. S<sub>2</sub> T<sub>1</sub> J
- 

13. Which of the following options is correct with respect to fraction of unshaded parts of the figures?

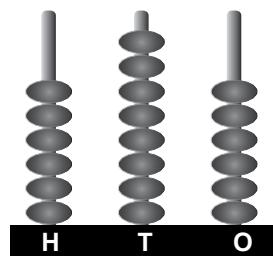
- A.  =  $\left[ \frac{3}{8} - \frac{3}{16} \right]$     B.  =  $\left[ \frac{1}{2} - \frac{1}{4} \right]$     C.  =  $\left[ \frac{1}{6} + \frac{1}{3} \right]$     D.  =  $\left[ \frac{3}{8} + \frac{3}{24} \right]$
- 

14. Factors of sum of the common factors of 18, 24 and 36 is \_\_\_\_\_.

- A. 1, 2, 3, 4, 6, 12    B. 2, 4, 6, 12    C. 1, 2, 4, 12    D. 1, 2, 4, 6, 12
- 

15. How many beads should be removed from the tens place and hundreds place in the abacus shown here if it has to represent number 28 tens less than the number shown in the abacus?

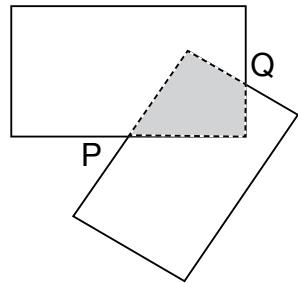
- A. 2, 2  
B. 8, 2  
C. 2, 1  
D. 3, 0



Space for Rough Work

16. The given figure is formed by two rectangles. The length of each rectangle is 16 cm and its breadth is 10 cm. P and Q are the mid-points of the sides of the rectangles.  
Find the perimeter of the shaded part.

- A. 32 cm  
B. 26 cm  
C. 30 cm  
D. 28 cm



17. I am a 4-digit number. All my digits are different. They add up to 23. The one's digit is half the hundred's digit and the one's digit is double the ten's digit.

What number am I?

- A. 9824      B. 8663      C. 7826      D. 9653

18. Put the correct sign to make the expression true.

$$40 \times 87 - 12 \boxed{\quad} 39 \times 65 - 24$$

- A. >  
B. <  
C. =  
D. Can't be determined

19. The given table represents the number of visitors at a Zoo on a certain day, where each represents 40 visitors. Study it carefully and answer the question that follows.

Time	Number of visitors
10 am - 12 noon	
12 noon - 2 pm	
2 pm - 4 pm	
4 pm - 6 pm	
6 pm - 8 pm	

If the price of an entrance ticket was ₹ 6, how much was collected from ticket sale on that day?

- A. ₹ 6500      B. ₹ 3900      C. ₹ 4500      D. ₹ 5400

Space for Rough Work

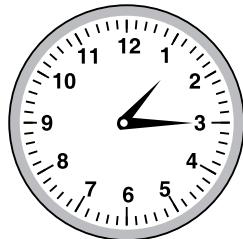
20. What is the number that is a multiple of 7 as well as a factor of 119?

- A. 28      B. 49      C. 17      D. 119

## EVERYDAY MATHEMATICS

21. Sanya went to her friend's house at 9:45 am. Her mother told her to reach back home in 180 minutes. If given clock shows incorrect time when she reached back home then which of the following statements is correct?

- A. Clock is 15 minutes slow.  
 B. Clock is 30 minutes slow.  
 C. Clock is 15 minutes fast.  
 D. Clock is 30 minutes fast.



22. Komal wants to decorate the boundary of a rectangular design with lace. If she uses 48 cm length of lace costing ₹ 15 per cm, then which are the possible dimensions of design and total cost of lace?

- A. l = 16 cm, b = 8 cm and ₹ 1920      B. l = 8 cm, b = 4 cm and ₹ 720  
 C. l = 4 cm, b = 8 cm and ₹ 620      D. l = 16 cm, b = 8 cm and ₹ 720

23. Rahul has 90 pens costing ₹ 1350. Shipra bought 7 dozen pens from him. How much amount did Shipra pay to Rahul?

- A. ₹ 1060      B. ₹ 960      C. ₹ 1260      D. ₹ 1360

24. Rehan's mother has gone to her friend's house on 19<sup>th</sup> December 2013 and stayed there for 1 month. If 11<sup>th</sup> January 2014 is Saturday, then on which day Rehan's mother left for her friend's house?

- A. Thursday      B. Saturday      C. Wednesday      D. Friday

25. Radhika bought  $5\frac{1}{4}$  kg mangoes,  $1\frac{1}{2}$  kg apples,  $9\frac{1}{3}$  kg papayas. How much weight did she carry home?

- A.  $16\frac{13}{12}$  kg      B.  $16\frac{1}{12}$  kg      C.  $15\frac{1}{13}$  kg      D.  $15\frac{12}{13}$  kg

Space for Rough Work

26. Pranav jogged  $4\frac{1}{2}$  times around a rectangular field that measured 25 m by 12 m. What is the total distance he jogged?
- A. 323 m      B. 333 m      C. 433 m      D. 443 m
- 

27. Garima went to movie with her two friends. She gave ₹ 1000 to counter for movie tickets, 1 bucket of popcorn and 3 pepsi cans, what information is needed to find the amount she will get back?

- A. Movie name  
B. Movie time  
C. Number of tickets  
D. Cost of a movie ticket



28. Ankur earns ₹ 20,098 in a month. Every month he spends ₹ 15,026 and saves the rest. How much will he save in 2 years?

- A. ₹ 21,728      B. ₹ 2,20,728      C. ₹ 1,21,728      D. ₹ 2,21,728
- 

29. Sanchi takes 24 mins 25 sec to draw 15 rectangular designs. How long does she take to draw 30 rectangular designs if all are drawn in equal period of time?

- A. 48 mins 50 sec      B. 49 mins 50 sec      C. 49 mins 10 sec      D. 48 mins 10 sec
- 

30. Manha can only pack 16 apples into a box. If there are 560 apples to be packed, how many boxes of apples will be there?

- A. 35      B. 15      C. 45      D. 25

### ACHIEVERS SECTION

31. A number multiplied by 5 and then added to 209, become 364. Three times of the number is \_\_\_\_\_.

Which of the following statements is/are true with respect to answer of the above question?

Statement 1 : Greater than 85 and less than 95.

Statement 2 : Number is multiple of 3.

- A. Only statement 1 is true      B. Only statement 2 is true  
C. Both statements 1 and 2 are true      D. Neither statement 1 nor 2 is true
- 

Space for Rough Work

32. Fill in the blank.

Subtract 65 minutes from the sum of 140 minutes and \_\_\_\_\_. The answer is 2 hrs. 35 mins.

- A. 1 hr 20 mins      B. 1 hr      C. 1 hr 40 mins      D. 1 hr 25 mins
- 

33. Which one of the following is INCORRECT?

A.  $2 \times \left( 6 + \frac{8}{1000} + \frac{3}{100} \right) = 12.076$

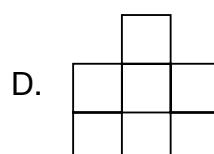
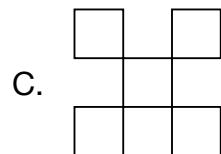
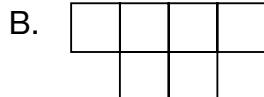
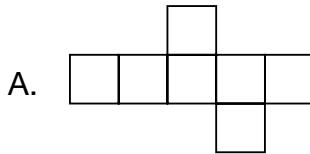
B.  $100 \times (87) = 8700$

C.  $4 \times \left( \frac{9}{10} - \frac{9}{100} \right) = 3.24$

D.  $\frac{9}{5} \times \frac{4}{15} \times \frac{3}{2} \times \frac{5}{8} \times \frac{2}{5} \times \frac{0}{3} = 7.2$

---

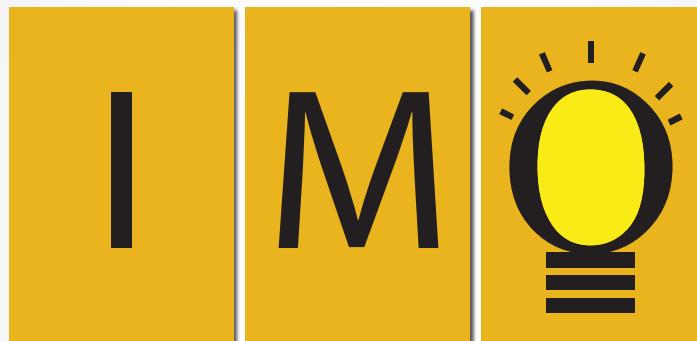
34. Which one of the following figures, each made up of 3 cm squares, has the greatest perimeter?



35. A number is greater than 50 but smaller than 59. It has only two factors. What is the number?

- A. 51      B. 55      C. 53      D. 57
- 

Space for Rough Work



**LEVEL - 2**

**Year 2015-16**

## MATHEMATICS

1. Arrange the following from the greatest to the smallest.

LXIX	CDXXII	DCVI	DXXV
P	Q	R	S

- A. P, Q, R, S      B. P, R, S, Q      C. R, S, Q, P      D. R, Q, S, P
- 

2. If 590 hundreds is added to 300 tens, then how many hundreds are there in the resulting number?

- A. 6200      B. 620      C. 62      D. 2600
- 

3. In 73,569, the difference between the place value of the digit at the ten thousand's place and the digit at the hundred's place is \_\_\_\_\_.

- A. 2,500      B. 67,000      C. 70,500      D. 69,500
- 

4. I am a two-digit number. My digits add to 12. I am an odd number. I am less than 41 but greater than 20. What number am I?

- A. 39      B. 57      C. 48      D. 75
- 

5. Put the correct sign to make the given expression true.

$$139 \times 65 + 24 \boxed{\phantom{0}} 240 \times 87 - 12$$

- A. >  
B. <  
C. =  
D. Can't be determined
- 

6. A number that is greater than 100 and less than 130 is a common multiple of 5 & 25, and a factor of 125. The product of its digits is \_\_\_\_\_.

- A. 2      B. 4      C. 6      D. 10
- 

7. If  $\star + \triangle = 2309$ ,  $5 \odot = 4365$  and  $\odot + \triangle = 1927$ , then find the value of  $5 \star + 2\triangle$ .

- A. 4255      B. 6275      C. 7780      D. 8383
- 

SPACE FOR ROUGH WORK

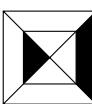
8. The product of 5420 and 18 is \_\_\_\_\_ greater than the product of 3098 and 14.  
A. 21398      B. 54188      C. 52913      D. 52931
- 
9. What is the missing number in the following expression?  
 $28,712 + 1,293 - 2,586 = \underline{\quad} ? \underline{\quad} - 1,920$   
A. 27,409      B. 27,419      C. 29,339      D. 32,591
- 
10. Which of the following numbers has the greatest number of factors?  
A. 35      B. 28      C. 48      D. 16
- 
11. Which of the following statements is CORRECT?  
A. 154 beads can be divided equally into 4 and 7 bags.  
B. 1024 is a common multiple of 6 and 8.  
C. 4 and 9 are common factors of 252 and 144.  
D. 7 is a factor of 28 and a multiple of 14.
- 
12. Mukti is 21 years old. Her father is thrice as old as she is. How old will she be when her father turns 70?  
A. 28 years      B. 29 years      C. 27 years      D. 30 years
- 
13. Taking 165 away from the product of 143 and X gives 979. Find the value of X.  
A. 8      B. 9      C. 10      D. 12
- 
14. Find the value of  $2P + 3Q + 4R + S$ .  
A. 80      B. 50      C. 30      D. 75
- $$\begin{array}{r} 3 & \boxed{P} & 3 & 7 \\ + & 1 & 3 & \boxed{Q} & 1 \\ \hline \boxed{S} & 2 & 2 & \boxed{R} \end{array}$$
- 
15. Mr. Sharma's class is going on a field trip. In each of the 2 vans, there will be 7 children and 1 adult. In each of the 4 cars, there will be 4 children and 1 adult. How many people are going on the field trip?  
A. 17      B. 30      C. 36      D. 38
- 

SPACE FOR ROUGH WORK

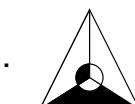
16. Select the CORRECT match of shaded part of the figure.



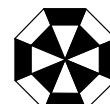
$$A. \left[ \frac{3}{8} - \frac{3}{16} \right]$$



$$B. \left[ \frac{1}{4} + \frac{1}{2} \right]$$



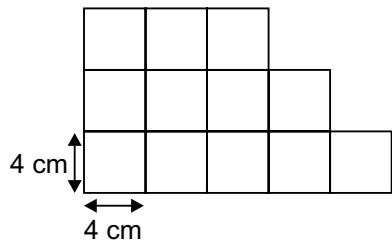
$$C. \left[ \frac{1}{6} + \frac{1}{3} \right]$$



$$D. \left[ \frac{3}{8} + \frac{3}{24} \right]$$

17. If the given figure is made up of identical squares, then find its perimeter.

- A. 68 cm
- B. 60 cm
- C. 64 cm
- D. 62 cm



18. Which of the following statements can be true?

- A. P is the largest of all the other numbers.
- B. S is the smallest of all the other numbers.
- C. P is the smallest of all the other numbers.
- D. R is the largest of all the other numbers.

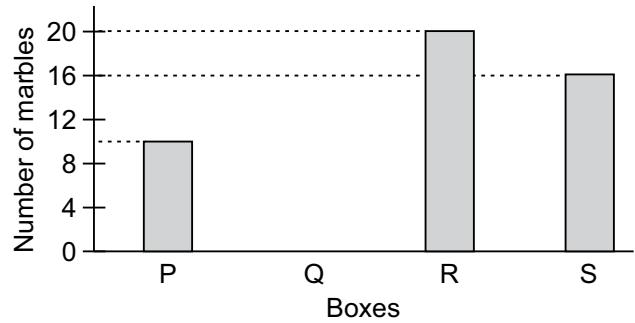
2709	P
2799	Q
2750	R
2790	S

19. Greatest five digit number that can be formed using the digits 7, 9, 0, 5, 8 each only once is \_\_\_\_\_.

- A. 79058
- B. 90758
- C. 98570
- D. 98750

20. Four boxes (P, Q, R and S) each contain different number of marbles. If the total number of marbles in these 4 boxes is 75, then find the number of marbles in Box Q.

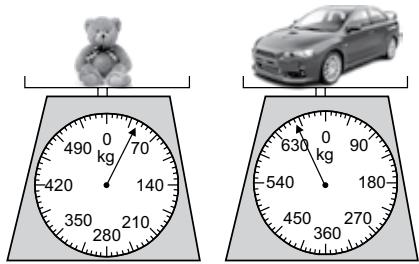
- A. 26
- B. 27
- C. 29
- D. 28



SPACE FOR ROUGH WORK

21. What is the total weight of the teddy bear and the car?

- A. 30 kg
- B. 375 kg
- C. 708 kg
- D. 400 kg



22. Pia started doing her homework at 15:44. She completed her homework at 20:12. How long did she take to complete her homework?

- A. 4 hrs 28 mins
- B. 4 hrs 32 mins
- C. 5 hrs 28 mins
- D. 5 hrs 32 mins

23. Himanshu had 80 kg 750 g of rice. He packed the rice into 12 packets, each weighing 5 kg 600 g. How much rice was left unpacked?

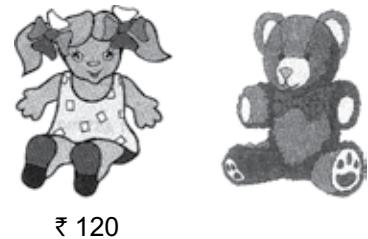
- A. 7 kg 200 g
- B. 13 kg 550 g
- C. 12 kg 950 g
- D. 13 kg 950 g

24. Monika's weight is less than 60 kg but more than 29 kg. If she gains 3 kg, her weight will be a multiple of 8. If she loses 4 kg, her weight will be a multiple of 7. Find Monika's weight.

- A. 51 kg
- B. 53 kg
- C. 48 kg
- D. 42 kg

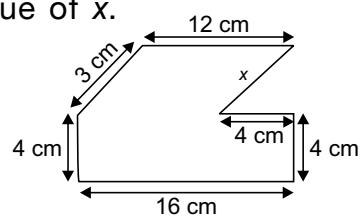
25. Deepti bought 1 doll and 4 teddy bears. The cost of a teddy bear is ₹ 20 less than the cost of a doll. If she gave the cashier a ₹ 1000 note, then how much change did she get?

- A. ₹ 680
- B. ₹ 780
- C. ₹ 8100
- D. ₹ 480



26. If the perimeter of the given figure is 50 cm, then find the value of  $x$ .

- A. 6 cm
- B. 7 cm
- C. 8 cm
- D. 9 cm



SPACE FOR ROUGH WORK

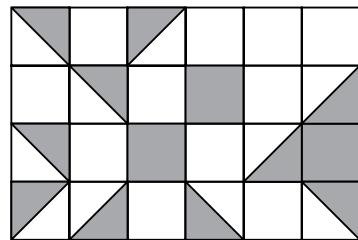
27. Which of the following is equivalent to fraction of unshaded part?

A.  $\frac{1}{3}$

B.  $\frac{2}{3}$

C.  $\frac{1}{4}$

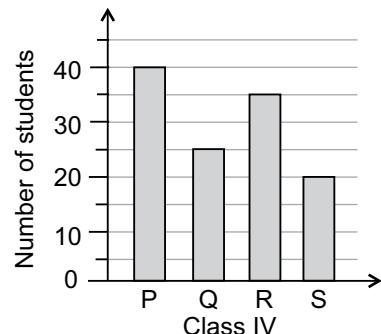
D.  $\frac{5}{18}$



28. The adjoining graph shows the number of students of four sections (P, Q, R, S) of class IV.

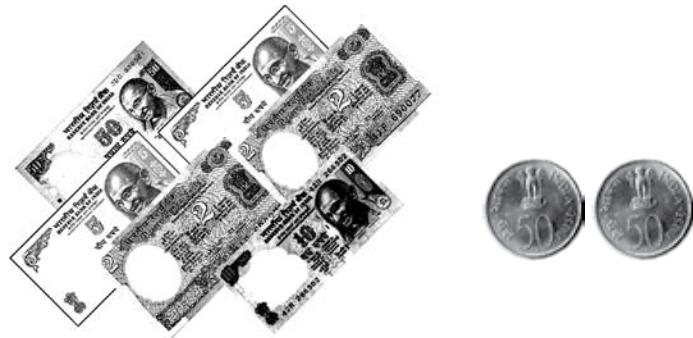
Find the difference between the sum of number of students of section P & R and the sum of number of students of section Q & S.

- A. 35  
B. 30  
C. 85  
D. 10



29. The given figure shows the amount of money Armaan saved in 5 months. He saved the same amount of money every month. How much did he save in 1 year?

- A. ₹ 180  
B. ₹ 15  
C. ₹ 150  
D. ₹ 320



30. Which of the following is/are INCORRECT?

(i)  $2 \times \left( 6 + \frac{8}{10} + \frac{3}{10} \right) = 12$

(ii)  $100 \times (87) = 8700$

(iii)  $4 \times \left( \frac{9}{10} - \frac{9}{100} \right) = \frac{324}{100}$

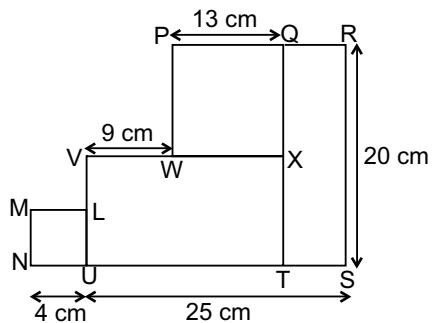
(iv)  $\frac{9}{5} \times \frac{4}{15} \times \frac{3}{2} \times \frac{5}{8} \times \frac{2}{5} \times \frac{0}{3} = 7$

- A. Both (i) and (ii)    B. (i), (ii) and (iii)    C. Only (iii)    D. Both (i) and (iv)

SPACE FOR ROUGH WORK

## ACHIEVERS SECTION

31. If QRST and TUVX are rectangles & PQXW and MLUN are squares, then the perimeter of the given figure is \_\_\_\_\_.  
 A. 87 cm  
 B. 92 cm  
 C. 88 cm  
 D. 98 cm



32. Find the value of  $(2P + 5Q) \times 3R$ .

- A. 249  
 B. 228  
 C. 280  
 D. 456

$$\begin{array}{r}
 7 \boxed{P} 6 1 \\
 6 8 2 9 \\
 + \boxed{P} 3 6 \\
 \hline
 1 \boxed{R} 7 2 \boxed{Q}
 \end{array}$$

33. If + = 3216 and = 2304, then find the value of + + .

- A. 5280      B. 4130      C. 4140      D. 5128

34. The table below shows the points scored by Latika and Garima in four games of bowling.

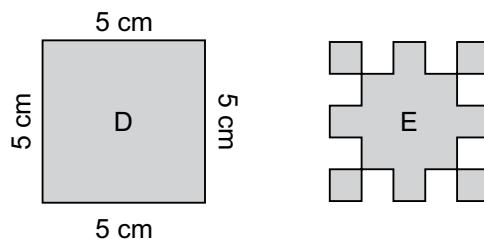
Games	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	Total
Latika	82	?	72	90	?
Garima	54	86	80	84	304

If Latika scored 22 points less than Garima in the 2<sup>nd</sup> game, then how many more points did Latika score than Garima in the four games played?

- A. 6      B. 2      C. 8      D. 4

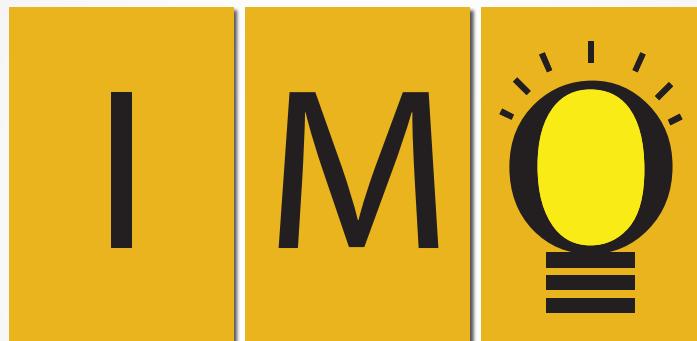
SPACE FOR ROUGH WORK

35. Eight squares of side 1 cm each are cut out from the square D. Now it looks like shape E. What is the length of the boundary of shape E?



- A. 28 cm      B. 14 cm      C. 36 cm      D. None of these

SPACE FOR ROUGH WORK



**LEVEL - 2**

**Year 2016-17**

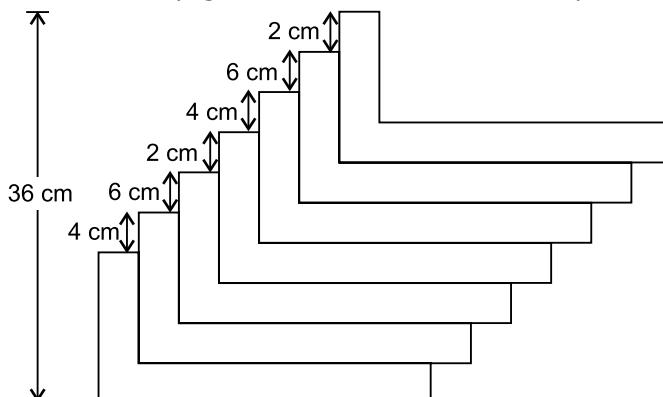
## MATHEMATICS

1. If  $\bigtriangleup \times \bigtriangleup$  stands for 4<sup>th</sup> multiple of 16 and O + O stands for 3<sup>rd</sup> multiple of 12, then find the value of  $\bigtriangleup + O$ .

A. 26      B. 64      C. 36      D. 42

---

2. Sanchi stacked 7 blocks of wood as shown below. What is the height of the block of wood which is at the bottom (figure not drawn to scale)?

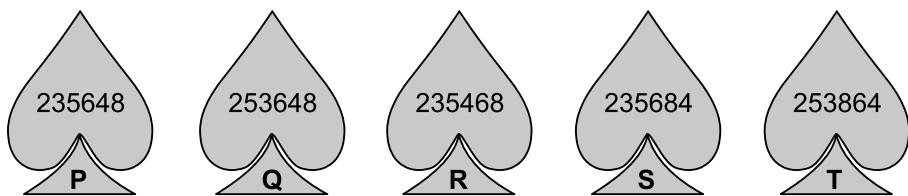


A. 12 cm      B. 24 cm      C. 8 cm      D. 10 cm

---

3. Arrange the following numbers in ascending order.

- A. R, P, S, Q, T  
B. T, Q, S, P, R  
C. Q, T, S, P, R  
D. R, P, S, T, Q

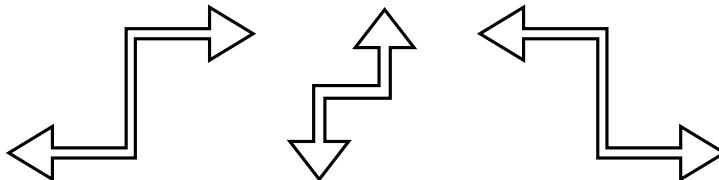


4. Garima can make a paper plane in 3 minutes. She started making paper planes at 2:30 pm and took a break of 35 minutes at 4:00 pm. At what time did she finish making 100 paper planes?

A. 8:31 pm      B. 9:00 pm      C. 9:05 pm      D. 8:05 pm

---

5. What fraction of lines are sleeping lines in the given figure?



A. 1/3      B. 1/4      C. 1/6      D. 1/8

---

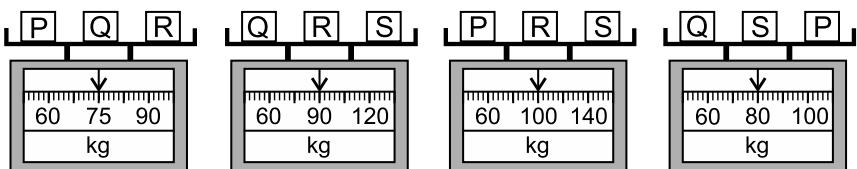
SPACE FOR ROUGH WORK

6. Latika has 5 times as many green marbles as red marbles. She has 1230 marbles altogether. If she removes  $\left(\frac{1}{5}\right)^{\text{th}}$  of green marbles, then how many green marbles are left with her?

- A. 205      B. 705      C. 820      D. 720
- 

7. Find the total weight of Q and R.

- A. 55 kg  
B. 45 kg  
C. 85 kg  
D. 50 kg



8. How many letters have perpendicular lines?

**OLYMPIAD**

- A. 4      B. 5      C. 3      D. None of these
- 

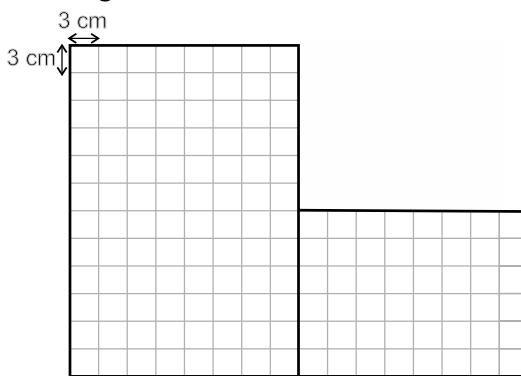
9. Find the difference between the greatest 6-digit number and smallest 5-digit number formed by using the digits 9, 8, 3, 4 (each digit must be used at least once).

- A. 966354      B. 90654      C. 963546      D. 963564
- 

10. There were 82 trays of eggs with 312 eggs in each tray. If 1020 eggs were broken, how many unbroken eggs were left in the trays?

- A. 25464      B. 25466      C. 24564      D. 25964
- 

11. The given figure is made up of 2 rectangles. Find the difference between the area of the bigger and smaller rectangle.



- A.  $432 \text{ cm}^2$       B.  $864 \text{ cm}^2$       C.  $423 \text{ cm}^2$       D.  $846 \text{ cm}^2$
- 

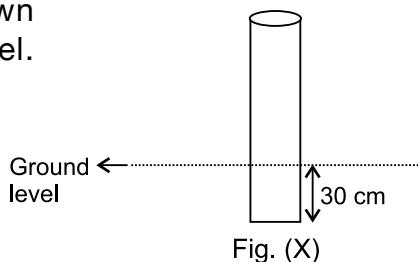
SPACE FOR ROUGH WORK

12. Multiply the smallest 3-digit number formed by using the digits 9, 4, 5 (using each digit only once) with 12. What will be the result?

- A. 5940      B. 5498      C. 5508      D. 5058
- 

13. Some part of a 25 m long pole is inside the ground as shown in Fig. (X). What fraction of the pole is above the ground level.

- A.  $\frac{3}{25}$   
B.  $\frac{247}{250}$   
C.  $\frac{3}{250}$   
D.  $\frac{147}{250}$
- 



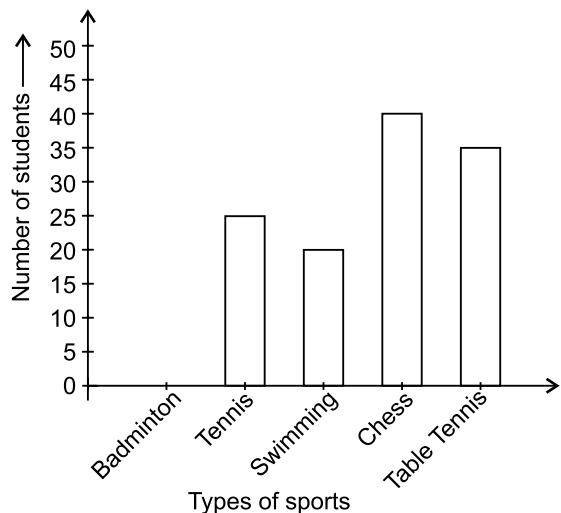
14. Find the value of  $(P + Q + R) \div 2$ .

- A.  $\frac{9}{2}$   
B.  $\frac{1}{2}$   
C.  $\frac{19}{2}$   
D.  $\frac{15}{2}$
- 

$$\begin{array}{r} 24 \sqrt{33754} \\ \underline{-24} \\ \boxed{P}7 \\ -96 \\ \hline 154 \\ -144 \\ \hline \boxed{R} \end{array} \quad 14\boxed{Q}6$$

15. The given bar graph shows the types of sports liked by 150 students. Find the number of students who like badminton.

- A. 30  
B. 50  
C. 45  
D. Data inadequate
- 



16. Select the correct match.

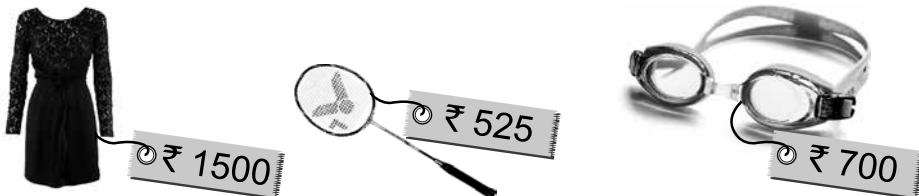
- |                |                           |
|----------------|---------------------------|
| A. 7:25 pm     | - 25 minutes past 7 pm    |
| B. 6:35 am     | - 35 minutes to 6 pm      |
| C. 19:35 hours | - 35 minutes past 8:00 am |
| D. 20:35 hours | - 35 minutes to 8:00 pm   |
- 

SPACE FOR ROUGH WORK

17. How many hundreds must be added to 1911 to get 28011 ?

- A. 261      B. 20000      C. 2000      D. 6100
- 

18. Rinki bought the following items from the market.



How much change did she receive, if she gave the shopkeeper, 2, two thousand rupee notes?

- A. ₹ 1275      B. ₹ 2725      C. ₹ 275      D. ₹ 1225
- 

19. What must be subtracted from 26783 to get 2768 ?

- A. 26783      B. 2768      C. 20415      D. 24015
- 

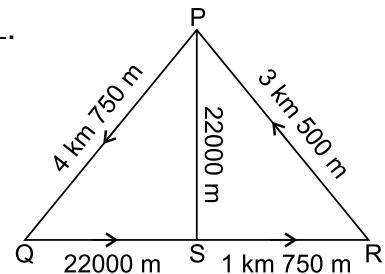
20. Form the 5-digit number using given clues.

- My thousand's place digit is the greatest one digit odd number.
- My one's place digit is the first multiple of 5.
- My ten thousand's place digit is factor of every number.
- My hundred's place digit is 4<sup>th</sup> multiple of 2.
- My ten's place digit is prime number greater than 5 and less than 10.

- A. 27895      B. 19875      C. 28795      D. 18957
- 

21. The sum of distance from P → Q and Q → R is \_\_\_\_\_.

- A. 18 km 500 m  
B. 28 km 500 m  
C. 285 km 50 m  
D. 185 km 50 m



22. Find the missing number.

$$136 \times 102 = 2 \times 6 \times 4 \times 17 \times \underline{\quad}$$

- A. 17      B. 16      C. 15      D. 27
- 

23. Multiply 1782 with 56, then rounded off the answer to the nearest thousand.

- A. 90000      B. 100000      C. 10000      D. 99000
- 

SPACE FOR ROUGH WORK

24. The given table shows the amount of money spent by 5 friends at a shopping mall.

Amit	Varun	Nitin	Saurabh	Mohit	Total
₹ 14095	₹ 15125	₹ 10225	?	₹ 19755	₹ 79564

Find the amount of money spent by Saurabh.

- A. ₹ 15404      B. ₹ 20364      C. ₹ 21334      D. ₹ 10334

25. The following time was seen on Samarth's and Sidak's watch when the actual time was 2:50 pm.

Find the time shown on Samarth's and Sidak's watch respectively when the actual time will be 16:50 hrs.

Samarth's Watch



Sidak's Watch



- A. 4:10 pm, 4:25 pm,      B. 4:25 am, 4:10 am  
C. 4:05 pm, 4:25 pm      D. 4:25 pm, 4:05 am

26. Select the correct match.

- A. 2444 seconds – 146460 minutes      B. 14 minutes 8 seconds – 848 minutes  
C. 1 hour 20 seconds – 3620 seconds      D. 2 hours 13 minutes – 133 seconds

27. A cup can hold 150 ml of water. How many cups of water are needed to fill the tank of capacity 6 litres ?

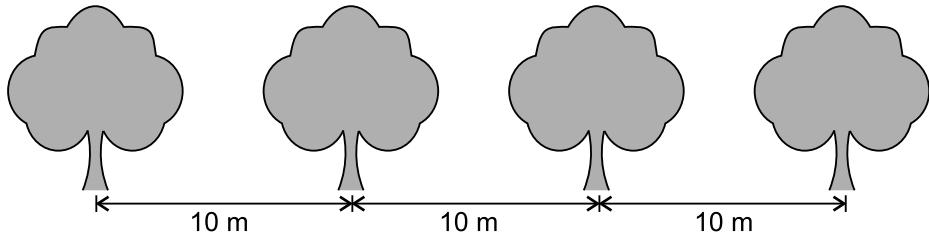
- A. 40      B. 30      C. 35      D. 45

28. A red ribbon is 4 m 56 cm long and a blue ribbon is 1 m 200 mm long. What is the total length of both the ribbons?

- A. 5 m 56 cm      B. 576 cm      C. 5060 cm      D. 6 m 76 cm

29. 501 trees were planted along a straight road. The distance between two consecutive trees is 10 m. What is the distance between first and 201<sup>st</sup> tree ?

- A. 2 km 200 m  
B. 2 km 10 cm  
C. 2 km  
D. 3 km 100 m



30. Nisha had some toys in her store. She sold 1206 toys in January and 1654 toys in February. After she bought 2669 toys in March, she had 5936 toys altogether. How many toys did she have at first ?

- A. 6127      B. 5745      C. 407      D. 5454

SPACE FOR ROUGH WORK

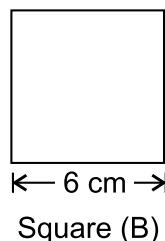
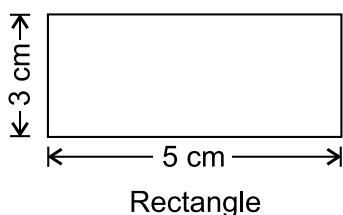
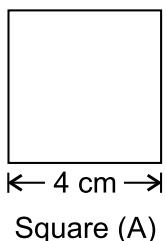
## ACHIEVERS SECTION

31. If each smiley represents a 1-digit number, and

$\smiley \times \smiley = \smiley\smiley$ ,  $\smiley \times \smiley = \smiley + \smiley$ ,  $\smiley + \smiley = \smiley$  and  $\smiley - \smiley = \smiley$ , then find the value of  $\smiley + \smiley + \smiley$ .

- A. 7      B. 8      C. 9      D. 6
- 

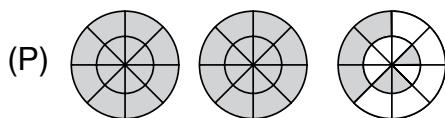
32. Which of the following statements is CORRECT?



- A. Perimeter of square (A) is greater than the perimeter of rectangle.  
 B. Perimeter of square (B) is equal to the perimeter of rectangle.  
 C. (Perimeter of square (A) + perimeter of square (B)) is greater than the perimeter of rectangle.  
 D. (Perimeter of square (A) + perimeter of rectangle) is less than the perimeter of square (B).
- 

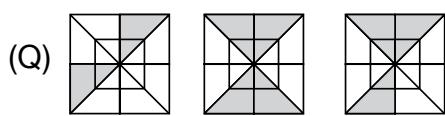
33. Match the figures given in column I with their unshaded parts given in column II.

**Column I**

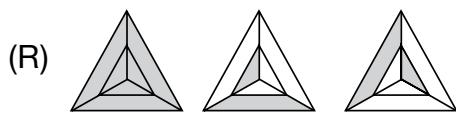


**Column II**

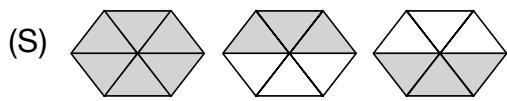
(i)  $\frac{15}{8}$



(ii)  $\frac{5}{8}$



(iii)  $\frac{6}{6}$



(iv)  $\frac{4}{3}$

- A. (P) – (ii), (Q) – (iii), (R) – (iv), (S) – (i)  
 B. (P) – (iv), (Q) – (iii), (R) – (ii), (S) – (i)  
 C. (P) – (ii), (Q) – (i), (R) – (iv), (S) – (iii)  
 D. (P) – (i), (Q) – (ii), (R) – (iii), (S) – (iv)
- 

SPACE FOR ROUGH WORK

34. Find the value of P, Q, R and P + Q.

3 3 5 (P)

× 1 2 6

(Q) 0 1 3 6

6 7 1 2 0

+ 3 3 5 6 0 0

4 (R) 2 8 5 6

P	Q	R	P + Q
A. 6	1	2	7
B. 6	2	2	8
C. 6	2	2	7
D. 6	1	2	8

35. State 'T' for true and 'F' for false.

- (i) 8 groups of 8 = 2 less than 66.
- (ii) 4 groups of 6 = 8 groups of 3.
- (iii) 9 groups of 4 = 2 more than 2 groups of 17.
- (iv) 3 groups of 7 = 1 more than 3 groups of 6.

(i)      (ii)      (iii)      (iv)

- A. T      F      T      F
- B. T      T      T      F
- C. T      T      F      F
- D. F      T      F      T

SPACE FOR ROUGH WORK



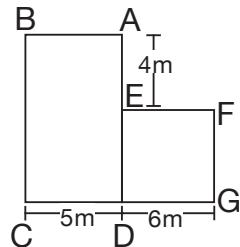
**LEVEL - 2**

**Year 2017-18**

## MATHEMATICS

1. In the given figure, ABCD is a rectangle and DEFG is a square. Find the perimeter of the figure.

- A. 38 m
- B. 42 m
- C. 46 m
- D. 52 m



2. How many letters in the given word have at least one line of symmetry?

**WATERING**

- A. 4
- B. 6
- C. 5
- D. 3

3. Study the following numbers.

MCCLIII , MDXCIV , MCDXC  
MDCXIV , MCCCLVII , MCDV

Find the sum of the digits at hundreds place of the smallest and the greatest number.

- A. 8
- B. 9
- C. 6
- D. 11

4. The given table shows the number of books read by students of a school.

Number of books read	0	1	2	3	4	5
Number of students	245	870	965	1120	844	762

How many students read more than two books?

- A. 3691
- B. 2571
- C. 2966
- D. 2726

5. Aakash had 34 kg 975 g of sugar. After packing it equally into 6 packets of equal weight, he was left with 8 kg 725 g of sugar. How much sugar was there in each packet?

- A. 4 kg 375 g
- B. 3 kg 475 g
- C. 3 kg 725 g
- D. 4 kg 725 g

6. Find the values of P, Q, R and S respectively.

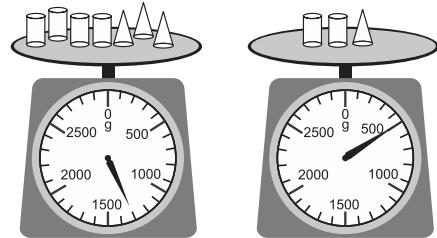
Number	Rounded off to nearest 100	Rounded off to nearest 1000
92684	P	R
43595	43600	Q
S	14600	15000

- A. 92000, 44000, 92000, 14595
- B. 92700, 43000, 93000, 14595
- C. 92000, 43000, 92000, 14680
- D. 92700, 44000, 93000, 14620

SPACE FOR ROUGH WORK

7. Study the given figures carefully and find the weight of □.

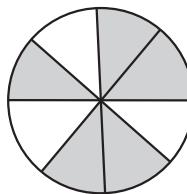
- A. 400 g
- B. 200 g
- C. 100 g
- D. 300 g



8. Study the following statements and select the INCORRECT option.

- A. Symbols V, L and D can never be subtracted while writing roman numerals.
- B. The successor of the greatest 4-digit number is the smallest 5-digit number.
- C. Difference between the successor and the predecessor of a number is always 1.
- D. The difference between the smallest and the largest 5-digit number formed by 3, 4, 6, 0 and 2 (without any repetition of a digit) is 43974.

9. Which of the following options has the same shaded fraction as the unshaded fraction of given figure?



- A. 
- B. 
- C. 
- D. 

10. Fill in the blanks.

- 4 groups of 9 is P less than 2 groups of 19.
- 3 groups of 5 is Q more than 6 groups of 2.
- 7 groups of 6 is R less than 9 groups of 6.
- 8 groups of 8 is S more than 4 groups of 15.

P	Q	R	S
A. 3	3	10	4
B. 2	4	12	6
C. 2	3	12	4
D. 3	4	10	6

SPACE FOR ROUGH WORK

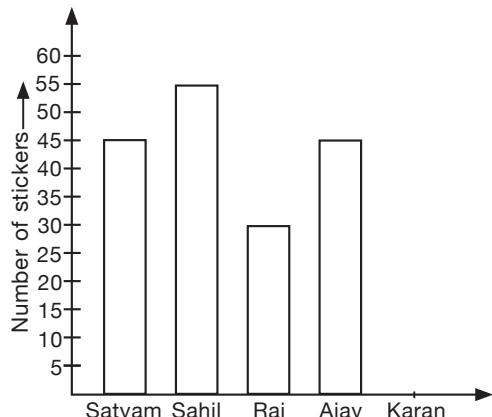
**Direction (11-12) :** Study the given graph showing the number of stickers collected by five friends and answer the following questions.

11. How many stickers Sahil must give to Ajay so that they both have equal number of stickers?

A. 10      B. 5  
C. 8      D. 3

12. If the total stickers collected were 225, then find the number of stickers collected by Karan.

A. 50      B. 45  
C. 55      D. 40



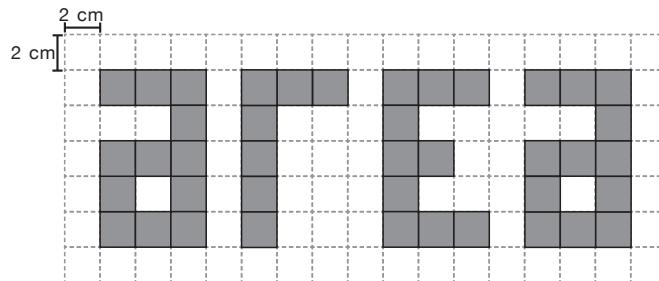
13. If the smallest 5-digit number formed by digits 8, 6, 0 and 4 (each digit must be used at least once) is divided by 12, then the quotient will be \_\_\_\_\_.

A. 3390      B. 3309      C. 3339      D. 3039

14. A train which was scheduled to arrive at Nizamuddin station got 1 hour 25 mins late. It leaves the station after 15 minutes and reaches Jaipur station at 9 : 45 p.m. after 8 hours 35 mins of journey. Find its scheduled time to arrive at Nizamuddin station.

A. 10 : 30 a.m.      B. 11 : 30 a.m.      C. 11 : 20 a.m.      D. 11 : 50 a.m.

15. Find the perimeter of the shaded region.



A. 150 cm      B. 152 cm      C. 154 cm      D. None of these

16. The given table shows the petrol used by Vivek in a week. Find the total quantity of petrol used by Vivek on Monday, Wednesday, Friday and Saturday.

A. 17 L 540 mL  
B. 16 L 540 mL  
C. 16 L 225 mL  
D. 18 L 85 mL

Monday	3 L 560 mL
Tuesday	4 L 325 mL
Wednesday	3 L 780 mL
Thursday	4 L 105 mL
Friday	5 L 325 mL
Saturday	4 L 875 mL

SPACE FOR ROUGH WORK

17. Find the number using the given clues.

- The number is the predecessor of a two digit even number.
- The number is a multiple of 3.
- Sum of digits of the number is an even number.

A. 87

B. 99

C. 93

D. 66

**Direction (18-19):** Study the given table showing the number of marbles of different colours

Trishi has and answer the following questions.

Colour	Red	Yellow	Orange	Pink
Number of marbles	26	34	52	47

18. What fraction of total marbles are of red colour?

A.  $\frac{52}{159}$

B.  $\frac{26}{159}$

C.  $\frac{47}{160}$

D.  $\frac{37}{160}$

19. What fraction of total marbles are not of orange colour?

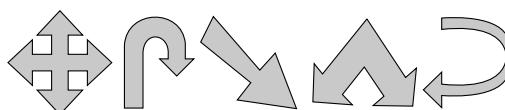
A.  $\frac{107}{159}$

B.  $\frac{52}{159}$

C.  $\frac{107}{160}$

D.  $\frac{133}{160}$

20. How many of the following figures have no line of symmetry?



A. 2

B. 3

C. 4

D. 5

21. If + + = ₹ 1986; + = ₹ 2385 and + = ₹ 684,

then find the cost of .

A. ₹ 1563

B. ₹ 1060

C. ₹ 1480

D. ₹ 1673

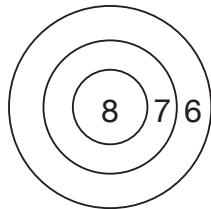
22. Kunal is playing game of darts. The dart board is divided into 3 sections having different points as shown in the figure. The score of Kunal is the sum of the points he acquired after throwing 3 darts on the board. Which of the following cannot be the score of Kunal?

A. 22

B. 23

C. 20

D. 26



SPACE FOR ROUGH WORK

23. How many hundreds must be subtracted from 27683 to get 2783?

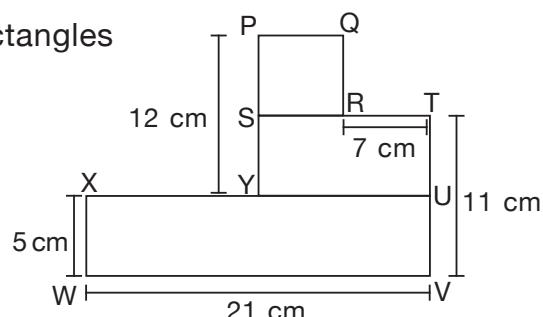
- A. 249      B. 2400      C. 20000      D. 2000
- 

24. Multiply 8<sup>th</sup> multiple of 14 with 12<sup>th</sup> multiple of 19 and round off the answer to the nearest thousand. The final result is \_\_\_\_\_.

- A. 26000      B. 25000      C. 25600      D. 25500
- 

25. Given figure is made up of a square PQRS and two rectangles STUY & XUVW. Find the length of XY.

- A. 12 cm  
B. 8 cm  
C. 13 cm  
D. 6 cm



26. Which of the following numbers are arranged in ascending order?

- A.  $\frac{7}{12}, \frac{8}{12}, \frac{10}{12}, \frac{9}{12}, \frac{11}{12}$   
B.  $\frac{3}{7}, \frac{4}{7}, \frac{5}{7}, \frac{8}{7}, \frac{10}{7}$   
C.  $\frac{11}{14}, \frac{10}{14}, \frac{8}{14}, \frac{6}{14}, \frac{3}{14}$   
D.  $\frac{15}{19}, \frac{13}{19}, \frac{10}{19}, \frac{7}{19}, \frac{9}{19}$
- 

27. A library has 312 racks of books. If each rack has 263 books, then how many total books are there?

- A. 92006      B. 91846      C. 81042      D. 82056
- 

28. Find the missing number.

$$3 \times 8 \times 14 \times 12 \times ? = 126 \times 288$$

- A. 6      B. 9      C. 12      D. 8
- 

29. A barrel contains 20 L 175 mL of oil. The barrel is emptied into 25 cans equally. Each can will hold \_\_\_\_\_ of oil.

- A. 812 mL      B. 917 mL      C. 807 mL      D. 87 mL
- 

30. Sonali had 78 boxes with 287 bangles in each box. If 1453 bangles were broken, then how many unbroken bangles were there?

- A. 21843      B. 20763      C. 22913      D. 20933
- 

SPACE FOR ROUGH WORK

## ACHIEVERS SECTION

31. Shivam's flight to Canada departs at 11 : 15 p.m. He has to check in at the airport terminal 1 hour 45 minutes earlier. The journey to the terminal takes 50 minutes. He needs 30 minutes to get dressed and 15 minutes to have his dinner. At what time should he start preparing for his trip?

- A. 6 : 55 p.m.  
B. 8 : 05 p.m.  
C. 7 : 55 p.m.  
D. 8 : 25 p.m.

32. Find the value of  $S \times R - P + Q$ .

- A. 41  
B. 30  
C. 32  
D. 38

$$\begin{array}{r} 3\boxed{P}57 \\ 27) \overline{87946} \\ -81 \downarrow \\ \hline 69 \\ -54 \downarrow \\ \hline 1\boxed{S}4 \\ -135 \downarrow \\ \hline 196 \\ -1\boxed{Q}9 \\ \hline \boxed{R} \end{array}$$

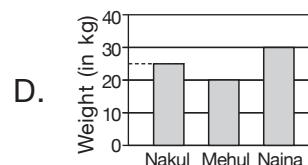
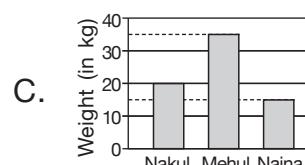
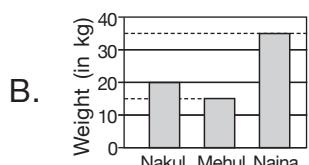
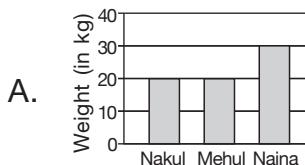
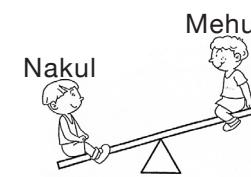
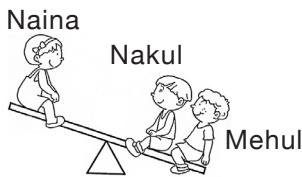
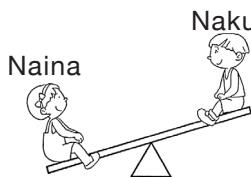
33. Fill in the blanks.

- There were 40 children at a party. 14 of them were boys. P fraction of children were girls.
- Cost of a teddy bear is  $\frac{2}{3}$  of the cost of a doll. If cost of the teddy bear is ₹114, then cost of the doll is ₹Q.
- Difference between  $3\frac{1}{4}$  and  $2\frac{3}{8}$  is R.
- If  $x + \frac{5}{12} = \frac{7}{6}$ , then  $x = \underline{\text{S}}$ .

P	Q	R	S
A. $\frac{7}{20}$	76	$\frac{5}{8}$	$\frac{1}{4}$
B. $\frac{13}{20}$	76	$\frac{7}{8}$	$\frac{1}{4}$
C. $\frac{7}{20}$	171	$\frac{5}{8}$	$\frac{3}{4}$
D. $\frac{13}{20}$	171	$\frac{7}{8}$	$\frac{3}{4}$

SPACE FOR ROUGH WORK

34. Nakul, Mehul and Naina were sitting on the see-saw at the playground. Which of the following bar graphs correctly shows the weight of the three children?



35. Match the numbers obtained after the additions of roman numerals given in Column I with their hundreds digit given in Column II.

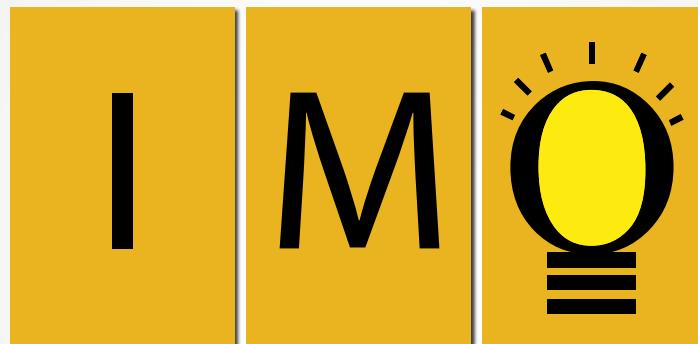
**Column I**

- P.  $\text{MMDCCX} + \text{MCDXVII}$   
 Q.  $\text{MCCCXV} + \text{MDCIX}$   
 R.  $\text{MDXCIX} + \text{MDCVIII}$   
 S.  $\text{MCDVII} + \text{MDCIX}$   
 A. P → (iii), Q → (i), R → (iv), S → (ii)  
 C. P → (iii), Q → (iv), R → (i), S → (ii)

**Column II**

- (i) 9  
 (ii) 0  
 (iii) 1  
 (iv) 2  
 B. P → (ii), Q → (i), R → (iv), S → (iii)  
 D. P → (ii), Q → (iv), R → (i), S → (iii)

SPACE FOR ROUGH WORK



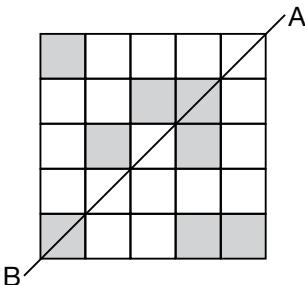
**LEVEL - 2**

**Year 2018-19**

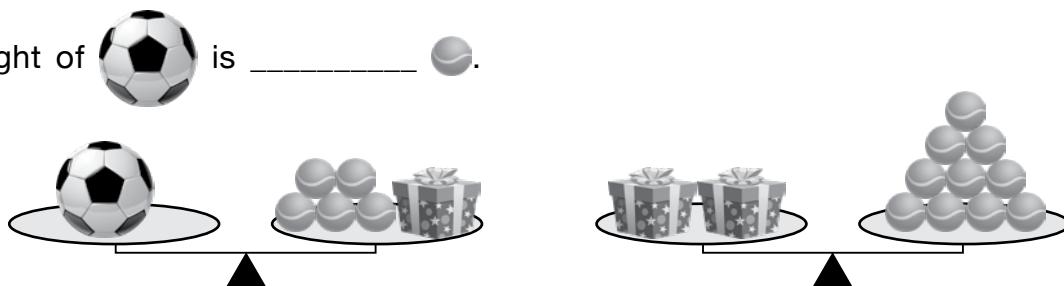
## MATHEMATICS

1. What is the least number of squares that must be shaded so that AB becomes the line of symmetry?

- A. 0
- B. 2
- C. 3
- D. 4



2. The weight of is \_\_\_\_\_ .



- A. 10
- B. 5
- C. 20
- D. 15

3. The value of CMXCIX – DCLX equals \_\_\_\_\_.

- A. CCXXIX
- B. CCCXXXIX
- C. DCXX
- D. DCLXIX

4. Niharika has a collection of toys. Out of which 4 are teddy bears, 5 are balls and 3 are dolls. What fraction of the toys are not balls?

- A.  $\frac{7}{12}$
- B.  $\frac{3}{12}$
- C.  $\frac{5}{12}$
- D.  $\frac{4}{12}$

5. Which of the following options has the same product as  $(212 \times 5)$ ?

- A.  $200 \times (12 + 5)$
- B.  $(200 + 12) \times 5$
- C.  $210 + (2 \times 5)$
- D.  $200 \times 12 \times 5$

6. Shruti has 120 toffees. Pankaj had two times as many toffees as Shruti had. Priya had 50 toffees less than Pankaj. How many toffees did they all have altogether?

- A. 430
- B. 550
- C. 290
- D. 310

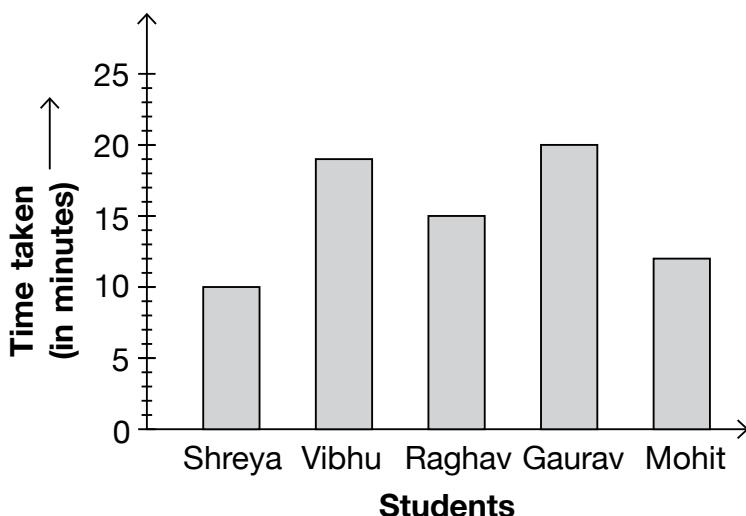
7. The given table shows the cost of clothes Mr Verma bought from a shop. If he paid ₹ 500, then how much money will he get back ?

- A. ₹ 280
- B. ₹ 180
- C. ₹ 80
- D. ₹ 270

Shirt	₹ 120
Pant	₹ 150
Tie	₹ 50

SPACE FOR ROUGH WORK

**Direction (8-9) :** The given bar graph shows the time taken by five students for their 2 km race for a Fitness Test. Study the graph carefully and answer the following questions.

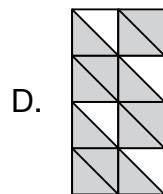
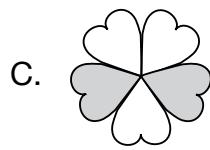
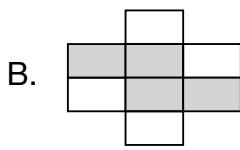
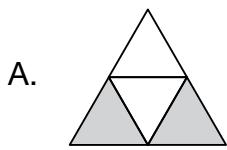


8. Among the five students, who completes the race in least time?
- A. Gaurav      B. Mohit      C. Vibhu      D. Shreya
- 
9. The correct ascending order of students according to the time taken by them from least to the greatest is
- A. Shreya, Mohit, Raghav, Vibhu, Gaurav      B. Mohit, Raghav, Vibhu, Shreya, Gaurav  
 C. Shreya, Raghav, Vibhu, Gaurav, Mohit      D. Gaurav, Vibhu, Raghav, Mohit, Shreya
- 
10. In the number 28523, if the digit at tens place and thousands place interchange, then find the sum of place values of all the digits in the new number formed.
- A. 22583      B. 28523      C. 20      D. None of these
- 
11. Find the value of  $2P - Q + R - 5$ .
- A. 15      B. 12      C. 0      D. 8

$$\begin{array}{r}
 & 2 \boxed{R} 5 \boxed{Q} \\
 12) & 2 \ 5 \ 8 \ 9 \ 7 ( \\
 & \underline{-2 \ 4 \downarrow} \\
 & \quad 1 \ 8 \\
 & \underline{-1 \ 2 \downarrow} \\
 & \quad \boxed{P} 9 \\
 & \underline{-6 \ 0 \downarrow} \\
 & \quad 9 \ 7 \\
 & \underline{-9 \boxed{P}} \\
 & \quad \boxed{R}
 \end{array}$$

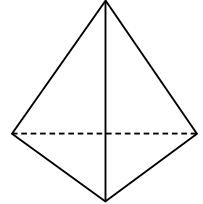
SPACE FOR ROUGH WORK

12. Which of the following figures has shaded fraction equal to  $\frac{1}{2} + \frac{1}{4}$ ?



13. Which of the following options is true about the given figure?

- A. It has five faces.
- B. It has five vertices.
- C. It has three curved faces.
- D. None of these



14. If  +  +  = 1500,  $2 \times \text{triangle symbol} + 2 \times \text{circle symbol} = 1900$  and  +  $2 \times \text{triangle symbol} = 1190$ , then find the value of  $3 \times \text{circle symbol}$ .

- A. 810
- B. 630
- C. 1890
- D. 950

15. The greatest four digit number that can be formed by using the digits 3, 5 and 0 (using each digit at least once) when multiplied by 15 gives \_\_\_\_\_.

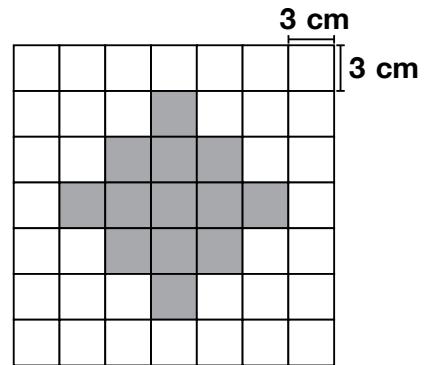
- A. 79500
- B. 82995
- C. 83295
- D. 82950

16. A group of 12 friends donates ₹ 45300 for a relief fund. If each friend donates equal amount of money, then how much money is donated by each of them?

- A. ₹ 3775
- B. ₹ 3560
- C. ₹ 2825
- D. ₹ 3105

17. Find the perimeter of the shaded part of the given figure.

- A. 50 cm
- B. 55 cm
- C. 57 cm
- D. 60 cm



SPACE FOR ROUGH WORK

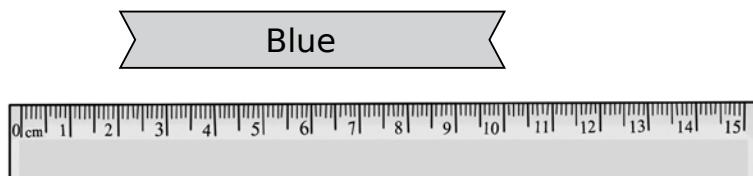
18. Identify the number using the given clues.



- It lies between 10 and 25.
- It is a multiple of 4 and 6.
- When the number is divided by 8, the remainder will be zero.

- A. 16      B. 24      C. 12      D. 40

19. Dhavi had two ribbons blue and green. If length of green ribbon is twice the length of blue ribbon, then find the total length of both the ribbons.



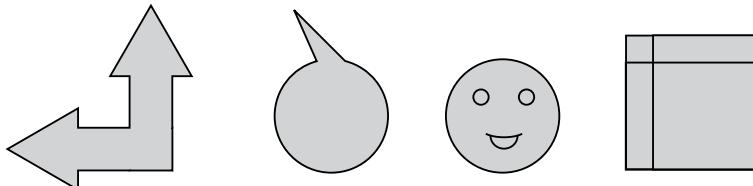
- A. 15 cm      B. 24 cm      C. 21 cm      D. 16 cm

20. If the given clock is 30 minutes slow, then which of the following options shows the actual time?

- A. 10 minutes past 6 O' clock  
B. 10 minutes to 7 O' clock  
C. 10 minutes past 7 O' clock  
D. 10 minutes to 6 O' clock



21. How many of the following figures do not have any line of symmetry?

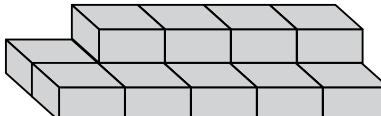
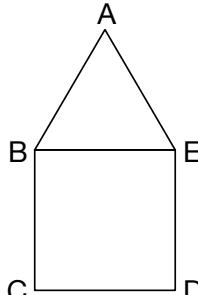
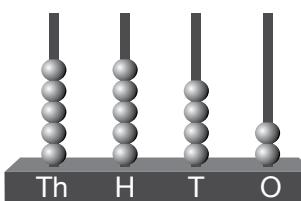


- A. 1      B. 2      C. 3      D. 4

22. By how much is  $\frac{19}{20}$  greater than  $\frac{7}{20}$ ?

- A.  $\frac{13}{20}$       B.  $\frac{12}{20}$       C.  $\frac{21}{20}$       D.  $\frac{31}{20}$

SPACE FOR ROUGH WORK

23. Shivam mixed 5L of litchi juice and 3L of guava juice and poured the mixture equally into 25 glasses. How much quantity of juice does each glass has?
- A. 320 mL      B. 200 mL      C. 250 mL      D. 270 mL
- 
24. How many cuboids are required to make the given solid?
- 
- A. 10      B. 11      C. 14      D. 15
- 
25. The given figure is made up of an equilateral triangle and a square. If the perimeter of the given figure is 40 cm, then find CD.
- A. 5 cm  
B. 8 cm  
C. 6 cm  
D. None of these
- 
- 
26. 6000 newspapers were delivered by 43 boys to various areas. How many newspapers were left, if each boy delivered equal number of newspapers?
- A. 3      B. 20      C. 23      D. 17
- 
27. How many beads should be added to the tens place in the given abacus, if it has to represent a number which is 3 tens more than the number shown in the abacus?
- 
- A. 2      B. 5      C. 3      D. 6
- 
28. A salesman sold a bike at ₹ 1,15,000 when rounded off to the nearest thousands. What could be the possible value of bike?
- A. ₹ 1,14,250      B. ₹ 1,15,625      C. ₹ 1,15,225      D. ₹ 1,15,525

SPACE FOR ROUGH WORK

29. A contractor got contract for the construction of two roads. The length of first road is 82 km 500 m and that of second road is 75 km 250 m. Find the total length of the road that he needs to construct.

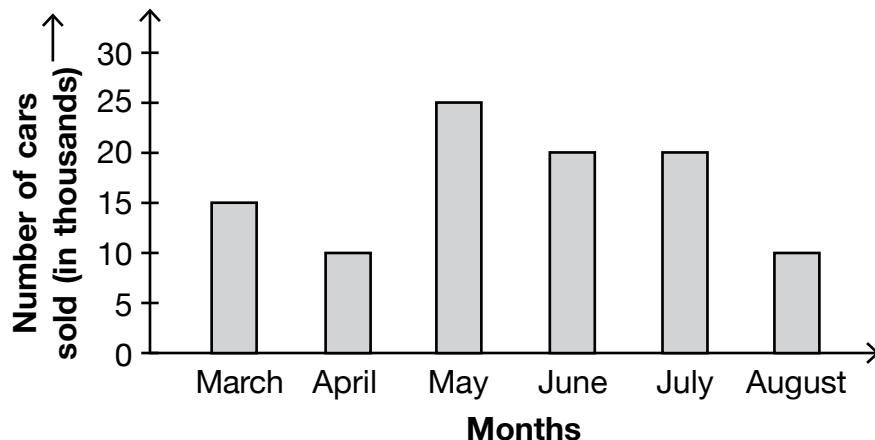
- A. 7 km 250 m      B. 152 km 500 m      C. 50 km 250 m      D. 157 km 750 m

30. A movie started at 4:00 p.m. and finished at 7:15 p.m. If the duration of interval break in the movie was 20 minutes, then the actual duration of the movie was \_\_\_\_\_.

- A. 3 hours 35 minutes      B. 2 hours 55 minutes  
C. 2 hours 50 minutes      D. 3 hours 15 minutes

### ACHIEVERS SECTION

31. The given bar graph shows the number of cars sold by a company from March to August.



- (i) In which of the following months, the sales were more than the previous month?  
(ii) Find the difference between the total sale of cars in the month of April and May together and the sales of cars in August.

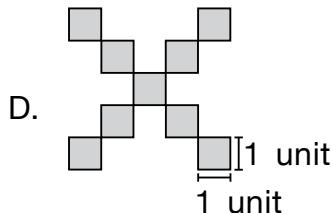
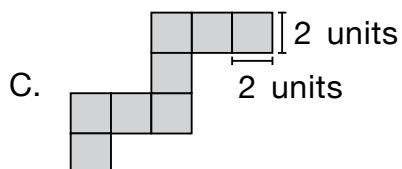
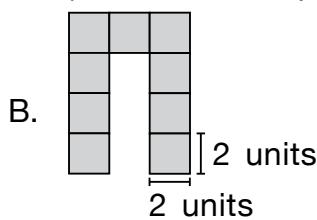
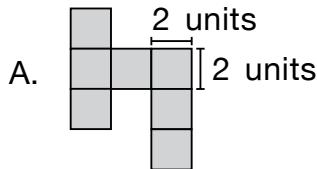
- | (i)     | (ii)   |
|---------|--------|
| A. May  | 25,000 |
| B. June | 25,000 |
| C. July | 15,000 |
| D. May  | 10,000 |

32. If  $P + Q + R = \frac{13}{15}$ ,  $P + Q = \frac{7}{10}$  and  $P - R = \frac{1}{30}$ , then find the value of  $Q + R$ .

- A.  $\frac{1}{6}$       B.  $\frac{2}{3}$       C.  $\frac{1}{5}$       D.  $\frac{4}{5}$

SPACE FOR ROUGH WORK

33. Which of the following figures (not drawn to scale) has the least perimeter?



34. Which of the following statements is INCORRECT?

- A. 40 thousands + 20 tens + 90 ones is 40290.
- B. In roman numeral symbol X cannot be subtracted from L.
- C. The sum of third multiple of 8 and fifth multiple of 5 is 49.
- D. 8 is a factor of both 32 and 56.

35. At 9:15 a.m., Amit left his house and reached the market at 10:20 a.m. After shopping, he left the market at 11:50 a.m.. He reached back his house at 12:30 p.m..

- (i) How much time did he spend at the market?
- (ii) How much time did he take to travel to his house from the market?

- | (i)             | (ii)    | (i)             | (ii)    |
|-----------------|---------|-----------------|---------|
| A. 1 hr 20 mins | 50 mins | B. 1 hr 30 mins | 40 mins |
| C. 45 mins      | 40 mins | D. 90 mins      | 50 mins |

SPACE FOR ROUGH WORK

## ANSWER KEYS

### IMO 2014

1.	(B)	2.	(B)	3.	(A)	4.	(A)	5.	(D)	6.	(B)	7.	(C)
8.	(C)	9.	(A)	10.	(B)	11.	(A)	12.	(D)	13.	(D)	14.	(A)
15.	(B)	16.	(B)	17.	(A)	18.	(A)	19.	(B)	20.	(D)	21.	(D)
22.	(D)	23.	(C)	24.	(A)	25.	(B)	26.	(B)	27.	(D)	28.	(C)
29.	(A)	30.	(A)	31.	(C)	32.	(A)	33.	(D)	34.	(C)	35.	(C)

2015 IMO-Level 2 was an online exam. Hence, paper cannot be included in the booklet.

### IMO 2016

1.	(C)	6.	(D)	11.	(C)	16.	(D)	21.	(C)	26.	(B)	31.	(D)
2.	(B)	7.	(D)	12.	(A)	17.	(C)	22.	(A)	27.	(B)	32.	(D)
3.	(D)	8.	(B)	13.	(A)	18.	(C)	23.	(B)	28.	(B)	33.	(A)
4.	(A)	9.	(C)	14.	(A)	19.	(D)	24.	(B)	29.	(A)	34.	(D)
5.	(B)	10.	(C)	15.	(C)	20.	(C)	25.	(D)	30.	(D)	35.	(C)

### IMO 2017

1.	(A)	2.	(A)	3.	(A)	4.	(D)	5.	(A)	6.	(C)	7.	(D)
8.	(B)	9.	(A)	10.	(C)	11.	(A)	12.	(C)	13.	(B)	14.	(C)
15.	(A)	16.	(A)	17.	(A)	18.	(A)	19.	(D)	20.	(B)	21.	(B)
22.	(A)	23.	(B)	24.	(B)	25.	(A)	26.	(C)	27.	(A)	28.	(B)
29.	(C)	30.	(A)	31.	(D)	32.	(C)	33.	(C)	34.	(B)	35.	(B)

### IMO 2018

1.	(B)	6.	(D)	11.	(B)	16.	(A)	21.	(A)	26.	(B)	31.	(C)
2.	(C)	7.	(C)	12.	(A)	17.	(C)	22.	(D)	27.	(D)	32.	(A)
3.	(A)	8.	(C)	13.	(C)	18.	(B)	23.	(A)	28.	(B)	33.	(D)
4.	(D)	9.	(D)	14.	(B)	19.	(A)	24.	(A)	29.	(C)	34.	(D)
5.	(A)	10.	(C)	15.	(D)	20.	(B)	25.	(B)	30.	(D)	35.	(A)

### IMO 2019

1.	(B)	6.	(B)	11.	(C)	16.	(A)	21.	(A)	26.	(C)	31.	(A)
2.	(A)	7.	(B)	12.	(D)	17.	(D)	22.	(B)	27.	(C)	32.	(B)
3.	(B)	8.	(D)	13.	(D)	18.	(B)	23.	(A)	28.	(C)	33.	(A)
4.	(A)	9.	(A)	14.	(C)	19.	(B)	24.	(C)	29.	(D)	34.	(B)
5.	(B)	10.	(A)	15.	(D)	20.	(B)	25.	(B)	30.	(B)	35.	(B)