# ICATS
# MATHEMATICS
## CONTEST 2021

Question Booklet

## GRADE 5 & 6
## JUNIORS

*Time Allowed: 90 Mins.*
*Maximum Marks: 90*

ICATS
International CATS Contests
An Assessment Center

# INTERNATIONAL
# CATS CONTESTS
## COMPETENCE & APTITUDE TESTING SERVICES
### FASTEST GROWING CONTESTS IN PAKISTAN

# ICATS MATHEMATICS CONTEST 2021
## JUNIORS (GRADE 5 & 6)
### TIME ALLOWED : 90 MINUTES, MAXIMUM MARKS : 90
### TOTAL QUESTIONS : 30 MCQS

INSTRUCTIONS

1. DON'T START ATTEMPTING THE PAPER UNTIL INSTRUCTED BY THE INVIGILATORS.

2. INSTRUCTIONS FROM THE EXAMINATION INVIGILATORS MUST BE CARRIED OUT PROMPTLY.

3. CAREFULLY RECHECK YOUR NAME, FATHER NAME, SCHOOL NAME, ADDRESS ETC AT THE BUBBLE SHEET / ANSWER SHEET.

4. RECORD ALL ANSWERS ON THE BUBBLE SHEET ONLY. SELECT BEST ANSWER FROM THE FOUR GIVEN OPTIONS AND MARK ONLY ONE OPTION IN EACH QUESTION.

5. USE BLUE / BLACK INK TO FILL UP THE CIRCLES FOR YOUR ANSWERS ON THE BUBBLE SHEET. USE OF LEAD PENCIL IS NOT ALLOWED.

6. USE OF ANY HELPING MATERIAL INCLUDING CELL PHONES AND ELECTRONIC DEVICES IS STRICTLY PROHIBITED.

7. EVERY CORRECT ANSWER EARNS THREE POINTS. THERE WOULD BE NEGATIVE MARKING. ONE POINT WOULD BE DEDUCTED FOR EVERY INCORRECT ANSWER.

8. CANDIDATES MAY NOT LEAVE THE EXAMINATION ROOM UNESCORTED FOR ANY REASON, AND THIS INCLUDES USING THE WASHROOM.

9. NO MATERIALS OR ELECTRONIC DEVICES SHALL BE BROUGHT INTO THE ROOM.

10. THERE ARE FIVE CATEGORIES OF THE CONTEST AS UNDER:
    A. TODDLERS (GRADE 1 & 2)
    B. KIDS (GRADE 3 & 4)
    C. JUNIORS (GRADE 5 & 6)
    D. JUVENILES (GRADE 7 & 8)
    E. ADOLESCENTS (GRADE 9 & 10 / O-LEVELS)

11. ONLY REGISTERED STUDENTS CAN PARTICIPATE IN THE CONTEST.

12. NO CANDIDATE SHALL TAKE OUT OF THE HALL ANY ANSWER BOOK(S) OR PART OF AN ANSWER BOOK, WHETHER USED OR UNUSED, OR OTHER SUPPLIED MATERIAL.

13. IF A PARTICIPANT DOES NOT UNDERSTAND A WORD OR PHRASE ON THE EXAM PAPER, NEITHER EXAMINER NOR INVIGILATOR IS PERMITTED TO ANSWER.

14. FOR INFORMATION ABOUT UPCOMING CONTESTS OR PROVIDING VALUABLE FEEDBACK, PLEASE VISIT WWW.CATSCONTESTS.ORG

15. ANY ACADEMIC MISCONDUCT OR MALPRACTICE MUST BE REPORTED TO INTERNATIONAL CATS CONTESTS AT INFO@CATSCONTESTS.ORG

**Q1.** Three of the following four numbers are alike in a certain way and hence form a group. Which one does not belong to the group?

**A** 52      **B** 70      **C** 48      **D** 68

**Q2.** The letter group is codified by the number codes:

| Letter | Q | A | W | Z | N | F | H | Y | B | R |
|---|---|---|---|---|---|---|---|---|---|---|
| Number code | 4 | 1 | 7 | 3 | 6 | 9 | 0 | 2 | 8 | 5 |

Find out the serial number of the combination, which represents the letter group; YAQBHZR.

**A** 2148035      **B** 2140835      **C** 2180435      **D** 2184035

**Q3.** There are four clocks on the wall.

Only one of them shows the correct time.

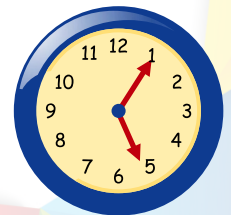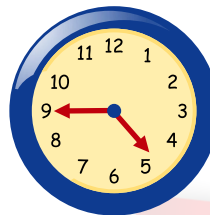One of them is 20 minutes ahead, another is 20 minutes late, and the other is stopped.

What is the time at the moment?

**A** 04:45

**B** 05:05

**C** 05:25

**D** 05:40
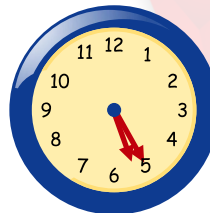
**Q4.** Ali has crash-landed in the desert.

He knows there's a village somewhere nearby, but he doesn't know in which direction.

So Ali comes up with the following plan to try to find the village:

- He fills up a water bottle from the plane, and takes a compass.
- Then he walks 1 km north, changes direction and walks 1 km east, then changes direction again and walks 1 km south.

Ali doesn't find the village, so he must return to the plane for the night.
In which direction must Ali walk to get back to the plane as quickly as possible?

| A North | B South | C East | D West |

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**Q5.** Liquid is poured from cylinder B into cylinder A until the two cylinders have the same amount of liquid.

How much liquid will each cylinder have?
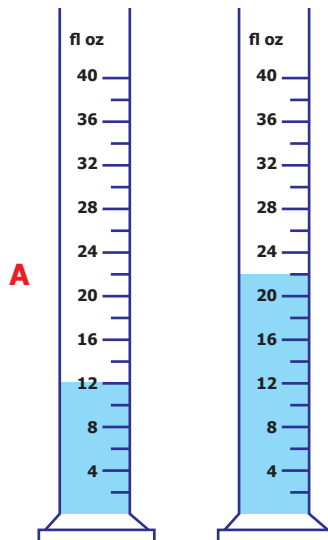


| A 17 fl oz | B 18 fl oz | C 22 fl oz | D 34 fl oz |

**Q6.** Alfonso the ostrich was training for the Head in the Sand Competition in the Animal Olympiad. He put his head in the sand at 8:15 on Monday morning and reached his new personal record by keeping it underground for 98 hours and 56 minutes. When did Alfonso pull his head out of the sand?

**A** On Thursday at 5:41 A.M.

**B** On Thursday at 11:11 A.M.

**C** On Friday at 5:19 A.M.

**D** On Friday at 11:11 A.M.
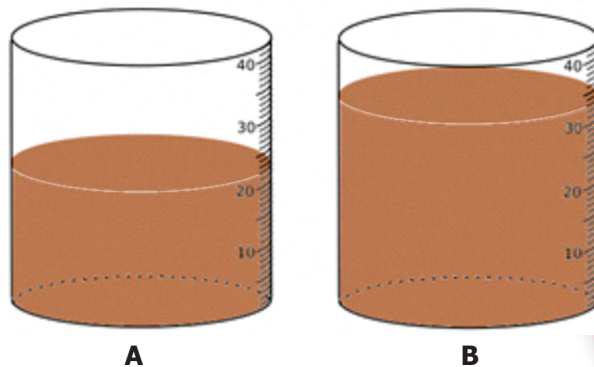
**Q7.** Ahmed ran 10,560 yards.

How many miles did he run?

**A** 0.6 mile    **B** 5 miles    **C** 6 miles    **D** 60 miles

**Q8.** The diagram shows two barrels that each contain 42 gallons of oil when full.

7 gallons of oil is poured from barrel B into barrel A.



A          B

How much oil is there then in barrel A?

**A** 26 gallons    **B** 27 gallons    **C** 28 gallons    **D** 29 gallons

**Q9.** Fatima needs to get to school at 8:30. It takes 12 minutes to get dressed, 13 minutes to eat and 25 minutes to walk to school. What time should she wake up to get to school on time?

**A** 7:40          **B** 7:50          **C** 8:00          **D** 8:05

**Q10.** There are 12 runners in a race, a quarter of them wear orange and a half of them wear yellow. How many runners do not wear orange or yellow?

**A** 2          **B** 3          **C** 5          **D** 6

**Q11.** 29 is subtracted from the greatest 2-digit number.
Then, the result is divided by the smallest 2-digit number.
What is the result?

**A** 7          **B** 9          **C** 10          **D** 11

**Q12.** The drawing shows a shelf that measures 1.5 meters. It is divided into 5 sections of equal length. What is the approximate length of each section?
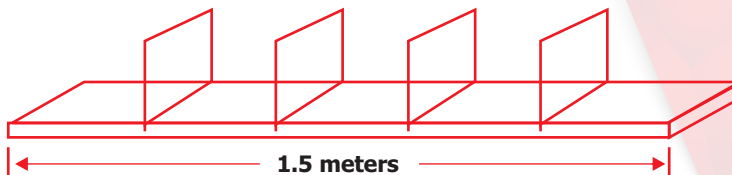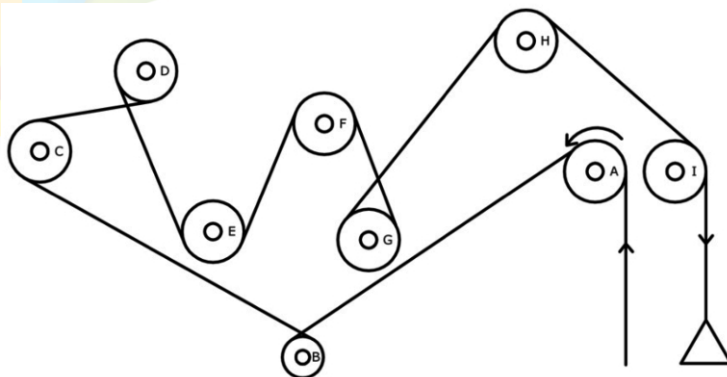


1.5 meters

**A** 3 meters          **B** 1 meter          **C** 0.75 meters          **D** 0.3 meters

**Q13.** Shown below is a belt and pulley arrangement. How many pulleys are rotating clockwise?
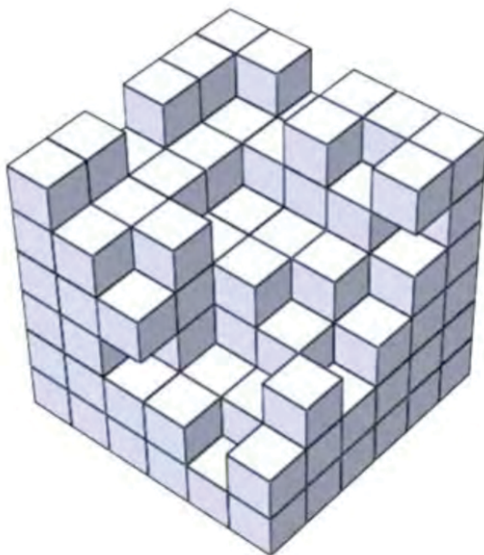


| **A** 4 | **B** 5 | **C** 6 | **D** 7 |

**Q14.** Count the number of cubes in the given figure. No cube has been removed from parts of the figure that are not visible.
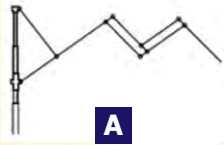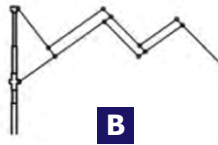


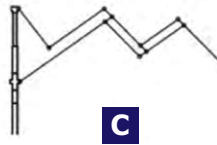| **A** 148 | **B** 158 | **C** 168 | **D** 178 |

ICATS Mathematics Contest 2021 (Juniors - Grade 5 & 6)

**Q15.** Shown below are schematic diagrams of a single arm of a 3-fold umbrella. Identify the correct representation.


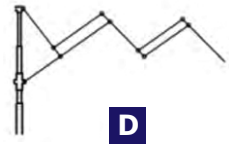
A      B      C      D
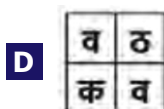
**Q16.** Which of the options would replace the missing block?

A

| ठ | द |
|---|---|
| व | ठ |

C

| ठ | क |
|---|---|
| व | द |

B

| व | द |
|---|---|
| व | क |

D

| व | ठ |
|---|---|
| क | व |

| व | ठ | क | व | द | व | क | ठ | द | व | ठ |
|---|---|---|---|---|---|---|---|---|---|---|
| क | व | द | व | क | ठ | द | व | ठ | क | व |
| द | व | क | ठ | द | व | ठ | क | व | द | व |
| क | ठ | द | व | ठ | क | व | द | व | क | ठ |
| द | व | ठ | क | व | द | व | क | ठ | द | व |
| ठ | क | व | द | व | क | ठ | द | व | ठ | क |
| व | द | व | क | ठ | द | व | ठ | क | व | द |
| व | क |   |   | व | ठ | क | व | द | व | क |
| ठ | द |   |   | क | व | द | व | क | ठ | द |
| व | ठ | क | व | द | व | क | ठ | द | व | ठ |
| क | व | द | व | क | ठ | द | व | ठ | क | व |

**Q17.** Identify the stamp used for printing the sample (in blue) from the options given below.
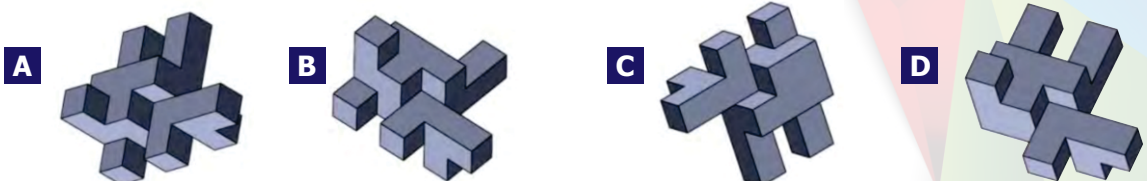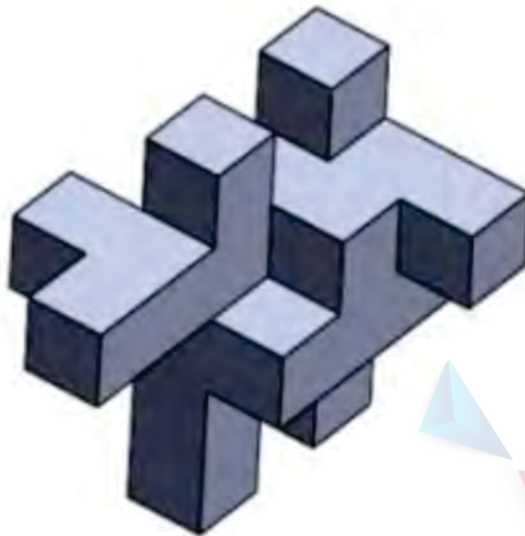


A      B      C      D

**Q18.** Figures 1 to 5 are views of a cube. From the options given below, choose the sixth view of the cube in the series.

1    2    3    4    5    6

A          B          C          D
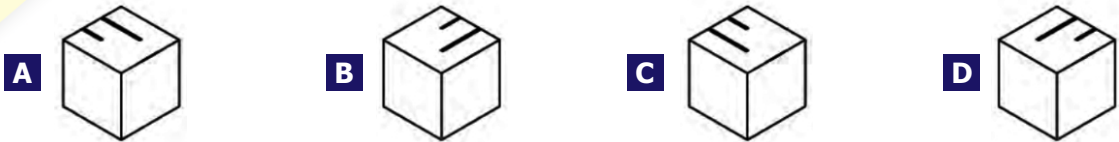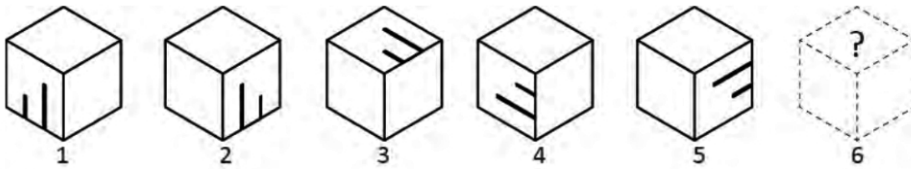
**Q19.** The image below shows a 3D object. Only one of the options shows the same object from a different view. Identify it.

A          B          C          D

**Q20.** Shown below is a map of a city with names of prominent localities. A man starts walking from Hampalkatte towards the west, takes the second right, second left, first left, third right, second left, and walks on straight to the end of the street. Where does he reach?
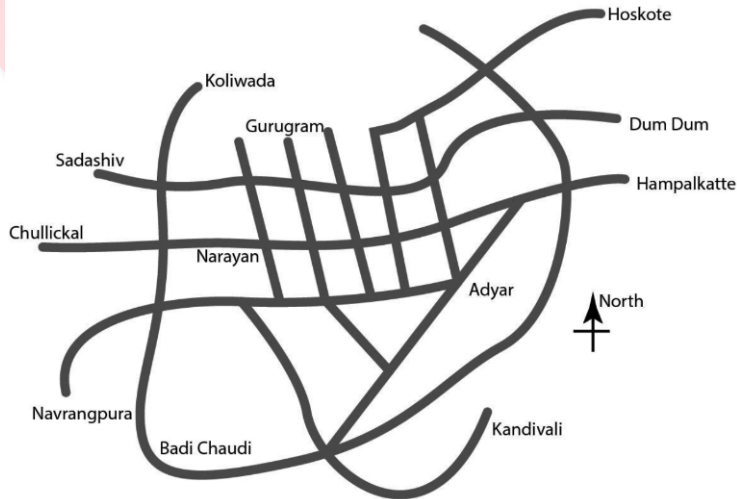


| A | Kandivali | B | Gurugram | C | Navrangpura | D | Hoskote |

**Q21.** Ali left home this morning at the time shown on the clock below.
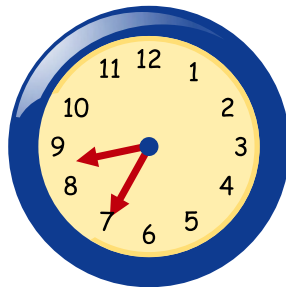


Fatima left home 20 minutes after Ali left. Ahmad left home 18 minutes after Fatima left. At what time did Ahmad leave home this morning?

| A | 7:57 a.m. | B | 8:13 a.m. | C | 8:38 a.m. | D | 9:13 a.m. |

**Q22.** A naughty kid plays with a clock kept on a table as shown below. She changes the hour and minute hands clockwise adding 8 hours and 45 minutes to the time and places the clock by rotating 270 degrees anti-clock wise. Identify the option that shows the modified time?

A 
B 
C 
D 
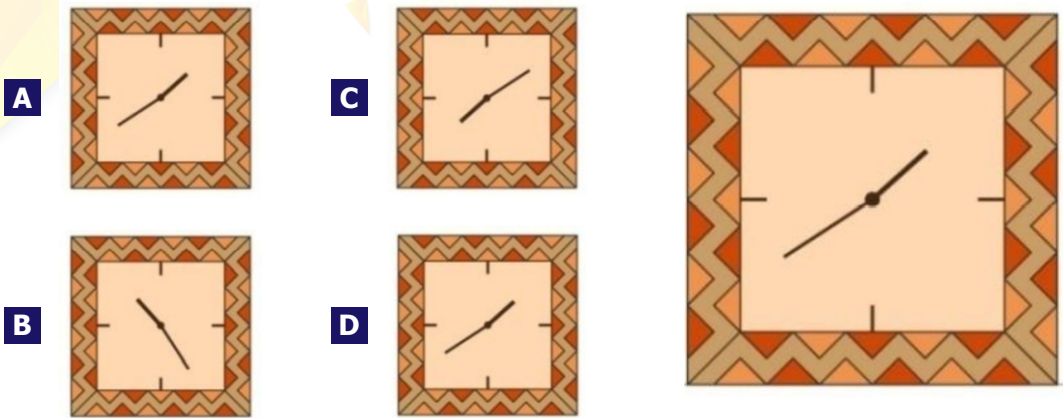


**Q23.** Front and back views of a solid are shown. Which of the options can be folded to form this solid?

A 
B 
C 
D
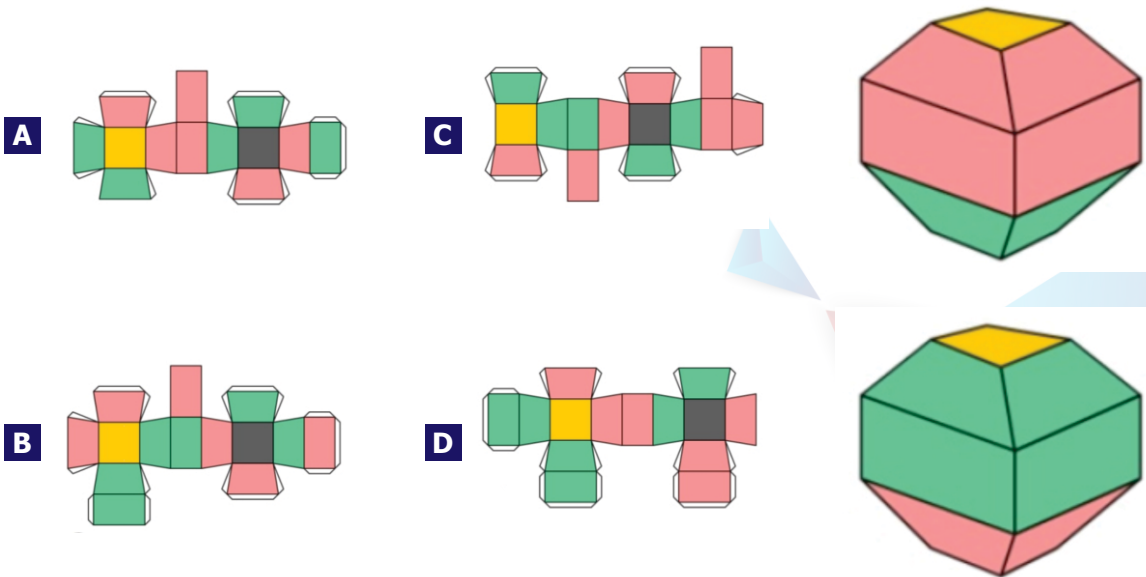
**Q24.** Shyam runs a dairy. In his cattle herd, each white cow gives 12 litres of milk, each brown cow gives 7 litres of milk and each yellow cow gives 10 litres of milk every day. He has drawn a sketch of his herd which is shown below. Using this sketch, calculate the amount of milk (in litres) produced by his diary per day?
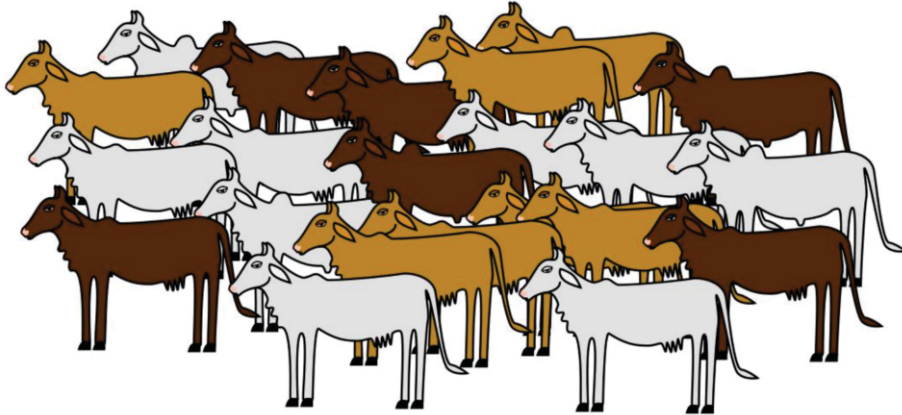


**A** 120 Litres  **B** 140 Litres  **C** 160 Litres  **D** 220 Litres

**Q25.** Which option will replace the question mark as the frog jumps in an animation sequence?
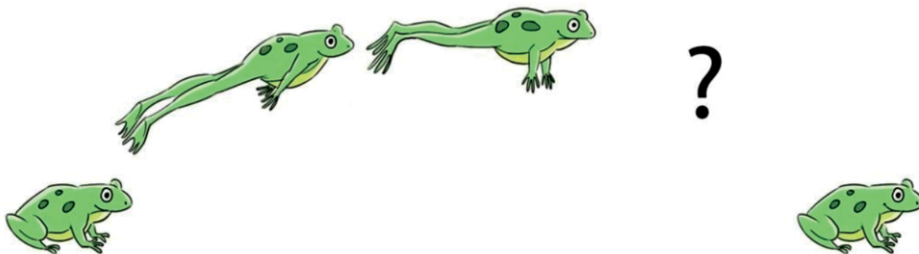


**A**  **B**  **C**  **D**

**Q26.** Which equation or equations are true?

Equation 1: $\dfrac{3}{10} + \dfrac{15}{100} = \dfrac{18}{100}$

Equation 2: $\dfrac{4}{10} + \dfrac{32}{100} = \dfrac{72}{100}$

Equation 3: $\dfrac{7}{10} + \dfrac{2}{100} = \dfrac{27}{100}$

Equation 4: $\dfrac{6}{10} + \dfrac{27}{100} = \dfrac{87}{100}$

**A** equation 1 only

**B** equation 2 only

**C** equations 3 and 4 only

**D** equations 2 and 4 only

**Q27.** Alina wants to buy a notebook for $2.15, a pack of glue sticks for $5.08, and a pack of pens for $3.08. What is the total cost of the three items Alina wants to buy?

**A** $10.75

**B** $10.31

**C** $10.23

**D** $10.11

**Q28.** Fatima wants to make 100 name tags with ribbons attached to them. Each name tag requires five centimeters of ribbon. She has 3.25 meters of ribbon.
Exactly how many more centimeters of ribbon does Fatima still need to make 100 name tags?
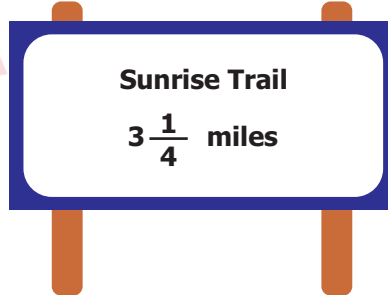
**A** 175

**B** 305

**C** 325

**D** 825

**Q29.** The sign below shows the length of a trail in a park.

Sunrise Trail

$3\frac{1}{4}$ miles

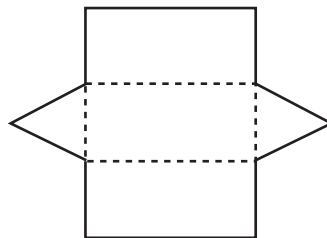What is the length, in feet, of the trail?

**A** 5,280

**B** 5,720

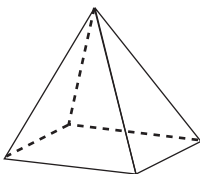**C** 15,840

**D** 17,160

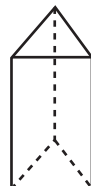**Q30.** The net below represents a three-dimensional object.

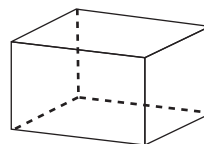Which three-dimensional object can be formed from the net?

**A**

**B**

**C**

**D**
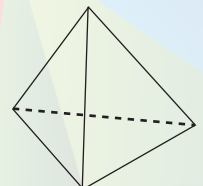
## National Toppers ICATS ART Contest 2020

| Student Name | Father Name | Grade | School |
|---|---|---|---|
| MUNTAHA ABASSI | MUNEER AHMED | 1 | PAKTURK MAARIF INTERNATIONAL SCHOOL |
| EMAAN FATIMA NAQVI | SYED ARIF HUSSAIN | 2 | ARMY PUBLIC SCHOOL AND COLLEGE |
| MUHAMMAD UMAIR | YOUNAS MUHAMMAD MUGHAL | 3 | BEACONHOUSE SCHOOL SYSTEM |
| AHMED KHAN | M. BILAL KHAN | 4 | KARACHI CAMBRIDGE SCHOOL |
| FABIHA RASHID | M. RASHID | 5 | LAHORE GRAMMAR SCHOOL |
| AYESHA ARSHAD | RANA M. ARSHAD | 6 | PAKISTAN INTERNATIONAL PUBLIC SCHOOL |
| AREEBA AHMAD | MATEEN AHMED | 7 | KIPS SCHOOL |
| MANAHIL AHMED | KHAWAJA MUSHTAQ AHMED | 8 | USMAN PUBLIC SCHOOL SYSTEM (CAMPUS 14) |
| SHIFA NOORANI | SIRAJ NOORANI | 9 | LEADERSHIP SCHOOL |
| ESHA SALMAN | MUHAMMAD SALMAN BUTT | 10 | THE EDUCATORS |

*Congratulations*

## National Toppers ICATS Creative Writing Contest 2020

| Student Name | Father Name | Grade | School |
|---|---|---|---|
| ALIYA HASNAIN | HASNAIN NAQVI | 1 | LAHORE GRAMMAR SCHOOL |
| AHMED KAMAL | MAJ. MUHAMMAD KAMAL | 2 | ARMY PUBLIC SCHOOL |
| BURHANUDDIN | M. HUSAIN KOTHARI | 2 | MSB EDUCATIONAL INSTITUTE |
| AMNA AZEEM | MUHAMMAD FAISAL | 3 | THE LEARNING CASTLE SCHOOL |
| ZARA KHALID | KHALID HAKIM | 4 | USMAN PUBLIC SCHOOL SYSTEM (CAMPUS 14) |
| HARIS A | ANWAR | 5 | PESHAWAR MODEL SCHOOL |
| KHADIJA HASNAIN | HASNAIN QADRI | 6 | LAHORE GRAMMAR SCHOOL |
| MERAL AZMAT | AZMAT KHAN | 7 | BEACONHOUSE SCHOOL SYSTEM |
| AMINA NOOR | MUHAMMAD JAHANGIR | 8 | FAUJI FOUNDATION MODEL SCHOOL |
| INSHAL | ISRAR KHAN | 9 | KOHINOOR GRAMMAR SCHOOL |
| AREESHA IMTIAZ | IMTIAZ ALI | 10 | HABIB GIRLS' SCHOOL |

*Congratulations*

# Compete
## if you are the best

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