1. Shanthini visits Kamala on the Sinhala-Tamil New Year with 5 *Laddus*. Kamala has 7 *Kevuns*. In how many different ways can Kamala choose 10 pieces of sweets, *Laddus* or *Kevuns*, for the New Year ceremonial first meal?

(A) 1 (B) 2 (C) 3 (D) 4 (E) 5

2. What is the smallest integer obtained by crossing out 10 digits from 12341234123412341234?

(A) 111121 (B) 111122 (C) 111123 (D) 111124 (E) 111142

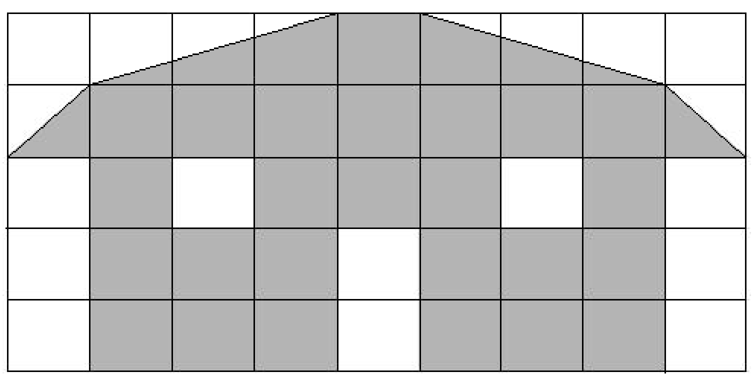
3. The sum of Sarath's age and Meena's age is 25. The sum of Kamal's age and Abdul's age is 40. Kamal is at least 2 years younger than Sarath. Then at least how many years is Abdul older than Meena?

(A) 15 (B) 16 (C) 17 (D) 25 (E) 40

4. At Kanjana's school four fifth of those who play chess play hockey and two thirds of those who play hockey play chess. The ratio of the number who play hockey : the number who play chess is

(A) 5 : 12 (B) 10 : 3 (C) 5 : 6 (D) 6 : 5 (E) 3 : 5

5. What is the shaded area of the figure drawn on 1 cm × 1 cm square grid which is shown on the below right?



(A) 25 cm^2 (B) 26 cm^2 (C) 27 cm^2 (D) 28 cm^2 (E) 29 cm^2

26. A grasshopper jumps on a straight-line in both directions. He starts at point A and jumps with lengths 1 cm, 2 cm, 3 cm, … in increasing order. Which of the following is (are) true?

I He cannot return to A in 4 jumps
II He cannot return to A in 2010 jumps
III He cannot return to A in 4020 jumps

(A) I only (B) II only (C) III only (D) I and II only (E) None

27. A 4 digit positive integer number is 4 times smaller than the number obtained by reversing its digits, i.e. if the 4 digit number is x and the number obtained by reversing the digits of x is y then $4x = y$. Which of the following is (are) true about the 4 digit number?

I Thousands digit is 2
II Hundreds digit is 1
III There is at most one such number

(A) I only (B) II only (C) III only (D) I and II only (E) All

28. Suppose a student answers all questions correctly except 5 in the *SLMC 2010* competition – these 5 questions he answers incorrectly and any two of them are not consecutive. In how many different ways can this happen?

(A) $26 \times 25 \times 24 \times 23 \times 22$ (B) $5 \times 5 \times 5 \times 5 \times 5$ (C) $\frac{26\times25\times24\times23\times22}{5\times4\times3\times2\times1}$

(D) $\frac{25\times25\times25\times25\times25}{5\times4\times3\times2\times1}$ (E) $\frac{30\times29\times28\times27\times26}{5\times4\times3\times2\times1}$

29. Which of the following is (are) true for the sequence 10, 110, 1110, 11110, ...

I Every second term is divisible by 11
II Every third term is divisible by 3
III There is a term divisible by 2010

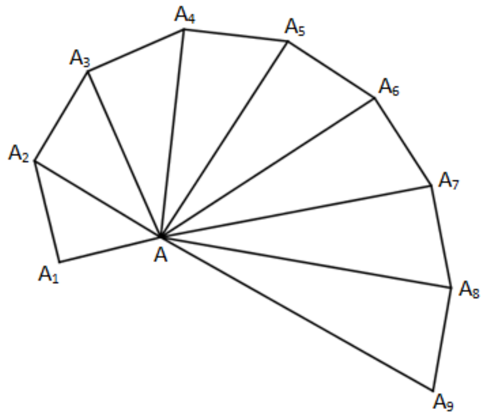
(A) I only (B) II only (C) III only (D) I and II only (E) All

30. At *Infinity Cricket Stadium*, built by *I. N. Finity*, a T20 series of infinitely many matches is going to be played. The price of a ticket for the first match is Rs.4000 and the price of a ticket for the n^{th} match is $\left(1-\frac{1}{n^2}\right)$ times the price of a ticket for the $(n-1)^{\text{th}}$ match for $n = 2, 3, \ldots$. Which of the following is (are) true?

I There is a match for which the price of a ticket is Rs. 2010
II The price of a ticket for the 20100424^{th} match is more than Rs. 2000
III The price of a ticket for any match is more than Rs. 2000

(A) I only (B) II only (C) III only (D) I and II only (E) All

11. What is the length of AA_6 if $AA_1 = A_nA_{n+1} = 1$ and $\angle AA_nA_{n+1} = 90°$ for $n = 1, 2, 3, \ldots$ in the figure below?



(A) 1 (B) $\sqrt{2}$ (C) 2 (D) $\sqrt{6}$ (E) $\sqrt{7}$

12. Positive integers a and b are such that $5a = 7b$. Then $a + b$ is always divisible by

(A) 3 (B) 5 (C) 7 (D) 11 (E) 13

13. The average of 15 integers strictly greater than 70 is 85. If 14 integers are strictly greater than 85 then the remaining integer is

(A) 71 (B) 72 (C) 73 (D) 74 (E) 75

14. Positive integers a, b, c, d are such that $ab + bc + cd + da = 30$. What is the maximum possible value of $a + b + c + d$?

(A) 11 (B) 13 (C) 14 (D) 17 (E) 30

15. In the *Land of Liars*, *White* clansmen always tell the truth, *Red* clansmen always lie. At a post election party of *White* and *Red* clansmen, two persons A and B are conversing and person A tells person B, "We are both *Reds*!" What can you conclude?

I A is a *Red*
II B is a *White*
III A is a *White*

(A) I only (B) II only (C) III only (D) I and II only (E) Nothing

16. In the *Land of Liars*, 2010 people from *White* and/or *Red* clans meet at a conference. If each one of them can tell all the others, "At least one of us is a *White*", what can you conclude?

I At least one of them is a *White*
II At least one of them is a *Red*
III All of them are from one clan

(A) I only (B) II only (C) III only (D) I and II only (E) None

17. Two distinct circles can intersect at most at 2 points. Three distinct circles can intersect at most at 6 points. Then at most at how many points can 5 distinct circles intersect?

(A) 20 (B) 30 (C) 42 (D) 56 (E) 72

18. What is the maximum of number of distinct positive integers that can have 30 as their least common multiple?

(A) 2 (B) 3 (C) 4 (D) 8 (E) 10

19. The product of 2010 integers is 1. Which of the following cannot be their sum?

(A) 1994 (B) 1998 (C) 2000 (D) 2006 (E) 2010

20. For any positive integer n, let $f(n)$ be the number of distinct positive integer factors of n including 1 and n. Which of the following is (are) true?

I There is a positive integer n_0 such that $f(n_0) = 2010$
II Given any positive integer M there is a positive integer n_M such that $f(n_M) = M$
III For all positive integers m and n, $f(m \times n) = f(m) \times f(n)$

(A) I only (B) II only (C) III only (D) I and II only (E) All

21. What is the remainder when the sum of all the 5 digit numbers written using digits 1, 2, 3, 4 and 5 with repetitions allowed, is divided by 1000?

(A) 625 (B) 725 (C) 825 (D) 925 (E) 975

22. One hundred 1's and fifty 2's are written on a blackboard. Now carry out the following operation: Erase two numbers and write 1 if they are equal and write 2 if they are not equal. Which of the following is (are) true?

I Exactly after 75 operations the sum of the numbers on the blackboard is odd
II Exactly after 149 operations only the number 1 remains on the blackboard
III Exactly after 149 operations only the number 2 remains on the blackboard

(A) I only (B) II only (C) III only (D) I and II only (E) None

23. Let $A = \{p_1, p_2, \dots, p_n\}$be a non empty set of distinct primes and let $x = p_1p_2 \dots p_n + 1$. Then which of the following is (are) true?

I x leaves the remainder 1 when divided by p_i for $i = 1, 2, \dots, n$
II Either x is a prime or x has a prime factor which is not in A
III x can not be a perfect square

(A) I only (B) II only (C) III only (D) I and II only (E) All

24. Sarath and Meena play the following game with an 8×9 square grid on a paper: They alternatively cross out a row or a column if at least one square of it is remaining uncrossed and the player who cannot cross out a row or a column looses. What can you conclude?

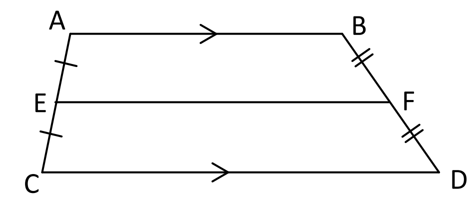
I First player has a winning strategy
II The player who leaves out a 2×2 uncrossed square grid for the other player can win
III Second player has a winning strategy

(A) I only (B) II only (C) III only (D) I and II only (E) II and III only

25. At the recently held general election of *Land of Liars*, party of *Red* clansmen fielded 3 candidates for the district of *Gullible*. The preferential voting (*Manape*) pattern of 100 people is as follows: The 3 candidates; *The Protector of Land of Liars*, *I. M. Your Servant* and *The Pride of Gullible* received 90, 60, and 57 votes respectively while 5 people did not vote for anyone. What is the most number of people who could have voted for all 3?

(A) 57 (B) 56 (C) 45 (D) 30 (E) 15

6. What is the length of *EF*, if the lengths of *AB* and *CD* are 6 cm and 8 cm respectively?



(A) 6.5 cm (B) 7 cm (C) 7.5 cm (D) 8 cm (E) 8.5 cm

7. There are 3 coins and one of them is a fake and it is lighter than the others – the other two coins are equal in weight and similar in appearance. What is the minimum number of weighings required with a standard balance with two pans but without weights to find the fake one?

(A) 1 (B) 2 (C) 3 (D) 4 (E) 5

8. There are six cities and each city connects by railway line directly to only two other cities, and each direct railway line between two cities is 100 km long. What is the total length of the railway lines?

(A) 300 km (B) 600 km (C) 900 km (D) 1200 km (E) 1500 km

9. In the following correctly worked out addition problem in binary each letter represents 0 or 1. Different letters need not represent different digits but each letter represents the same digit throughout the problem. If $I = M = S = 1$ and $H = 0$, what is the largest value '*EASY*' can take in base 10?

	M	*A*	*T*	*H*
+			*I*	*S*
	E	*A*	*S*	*Y*

(A) 5 (B) 9 (C) 11 (D) 15 (E) 17

10. In a certain year the month of April has exactly 4 Tuesdays, 4 Thursdays and 4 Saturdays. What day is April 24th in that year?

(A) Monday (B) Tuesday (C) Thursday (D) Friday (E) Saturday