WvP-evsjv e¨vsK - c_g Av‡jv MwYZ Drme 2010

চট্টগ্রাম আঞ্চলিক গণিত অলিম্পিয়াড

Av‡qvRK: evsjv‡`k MwYZ Awj¤úqvW KwgwU

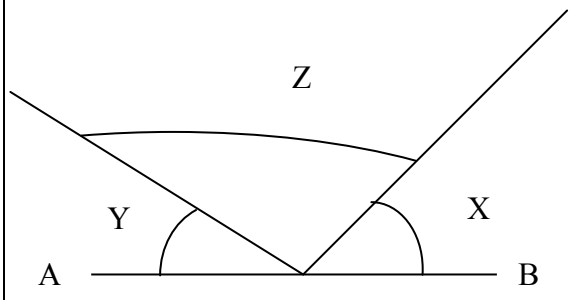
ক্যাটাগরি: প্রাইমারি (৩য়-৫ম শ্রেণী) **সময়: ১ ঘন্টা ১৫ মিনিট**

নাম(বাংলায়): **শ্রেণী(২০০৯ সাল):**

Name (In English): **Registration No:**

[এই উত্তরপত্রের নির্দিষ্ট স্থানে উত্তর লিখতে হবে। খসড়ার জন্য পৃথক কাগজ ব্যবহার করতে হবে এবং তা জমা দিতে হবে। সকল সংখ্যা ইংরেজীতে লেখা হয়েছে। সবাইকে নিজ নিজ উত্তরপত্র জমা দিতে হবে।]

bs	ck	DËi
1.	cvPwU wiKkv cwZ N›Uvq h_vµ‡g $\frac{10}{20}, \frac{20}{30}, \frac{30}{40}, \frac{40}{50}, \frac{50}{60}$ gvBj P‡j| me‡P‡q dzZMvgx wiKkvi ‡eM me‡P‡q axiMvgx wiKkv ‡e‡Mi KZMY? Five rickshaws run at a speed of $\frac{10}{20}, \frac{20}{30}, \frac{30}{40}, \frac{40}{50}, \frac{50}{60}$ miles per hour respectively. Find the ratio of the speed of the fastest rickshaw to the slowest rickshaw.	$\frac{5}{3}$
2.	GKwU ev‡· 4 †_‡K 50 chš Í 5 Gi ¸wYZK (5 Øviv wefvR¨) msL¨v¸‡jv ivLv nj| ev‡· †gvU KqwU msL¨v Av‡Q Ges ev‡· _vKv msL¨v¸‡jvi †hvMdj KZ? There are all the multiples of 5 from 4 to 50 in a box. How many numbers are there in the box? What is the summation of all numbers which are in the box?	10, 275
3.	30wU ev‡·i cwZ ZZxq ev‡· GKwU dj, cwZ cÂg ev‡· GKwU PK‡jU Ges cwZ `kg ev‡· GKwU eB ivLv Av‡Q| Ggb KZ¸‡jv ev· Av‡Q †h¸‡jv‡Z eB Ges GKwU dj Av‡Q wKš †Kvb PK‡jU †bB? Each third box contains a flower, each fifth box contains a candy and each tenth box contains a book. In a row of 30 boxes, how many boxes do contain a book and a flower and no candy?	0
4.	2, 3, 4, 5, 6 GB cvPwU AsK ‡_‡K cwZevi `BwU K‡i AsK wb‡q †gvU KqwU abvZ¥K AcKZ fMvsk ˆZwi Kiv hv‡e hv‡`i gvb 1 Gi †P‡q Kg? How many positive improper fractions can be made using any two of the five digits 2, 3, 4, 5, 6 at a time?	10
5.	*x, y, z* wfb wfb ‡gŠwjK msL¨v †hLv‡b *x* - *y* = *z* Ges *x* < *y* < *z*| *x* Gi gvb mewbg KZ n‡Z cv‡i? If *x, y, z* are three different prime numbers satisfying *x* - *y* = *z* and *x* < *y* < *z*, then what is minimum value of *x*?	5
6.	6-Gi Drcv`K ‡gvU 4wU: 1, 2, 3, 6 Ges †gŠwjK Drcv`K ïagvÎ `BwU: 2, 3	105 Gi me‡gvU KZ¸‡jv Drcv`K Av‡Q? The number 6 has four factors 1, 2, 3, 6 and 2, 3 are the only prime factors. How many factors 105 do have?	8
7.	26 gvP evsjv‡`‡ki ¯vaxbZv w`em| 26/03/1971 Zwi‡L evsjv‡`‡ki ¯vaxbZv †NwlZ nq| 26, 03 Ges 2010 Gi ¸Yd‡ji ‡gŠwjK Drcv`K¸‡jv wbYq Ki| 26th March is the Independence Day of Bangladesh. Independence of Bangladesh was declared on 26/03/1971. Find out all the prime factors of the product of 26, 03 and 2010.	2, 3, 5, 13, 67

bs	ck	DËi
8.	Qvi‡cvKv R‡b¥i ciæ`b t_‡KB cÖZæ`b GKwU K‡i ev"Pv t`lqv ïi K‡i| Qvi‡cvKv M‡elK wg: cv_ 2 ‡deqvwi GKwU ev‡· m`¨ Rb¥ †blqv GKwU Qvi‡cvKv †i‡L w`‡jb| 5 ‡deqvwi †k‡l H ev‡· 8 wU Qvi‡cvKv _vK‡j 7 ‡deqvwi †k‡l H ev‡· KqwU Qvi‡cvKv _vK‡e? A bug starts breeding on the very next day of its birth. On 2nd February bug researcher Mr. Partho kept a new born bug in a box. The number of bugs in that box after 5th February is 8. What is the number of bugs in that box after7th February?	32
9.	 $\angle Z = 80^0$ Ges $\angle X = 3\angle Y$ n‡j $\angle X$ Gi cÖvigvc KZ? $\angle Z = 80^0$and $\angle X = 3\angle Y$. Then find the value of the $\angle X$.	75^0
10.	GKwU N‡i 4 Rb AÜZæ_ e‡m Av‡Q| G‡`i c‡Z¨‡K nq imgvjvB cQ›` K‡i, bv nq ivR‡fvM cQ›` K‡i| Z‡e AšÍZ GKRb ivR‡fvM cQ›` K‡i| hw` †h‡Kvb `BR‡bi AšÍZ GKRb imgvjvB cQ›` K‡i Zvn‡j AÜZæ_‡`i †gvU KZRb ivR‡fvM cQ›` K‡i? 4 visitors are sitting in a room. Each one likes *ROSMALAI* or *RAJVOG*. At least one likes *RAJVOG*. Given that between any two students at least one likes *ROSMALAI*. How many visitors like *RAJVOG*?	1
11.	hw` *a* Ges *b* DfqB we‡Rvo msL¨v nq wb‡Pi †KvbwU Aek¨B we‡Rvo n‡e? If *a* and *b* are both odd numbers, which of the following must be an odd integer? *i)* $(a + b)^2 - 5$ *ii)* $a^2 + b^2$ *iii)* $(a + 1)^2 - (b + 1)^2$ *iv)* $(a - b + 1) - 9$ *v)* $(a + 1) \times (b + 1) - 2$	*i)* $(a + b)^2 - 5$
12.	MÖYZ Awj¤úqv‡W gfv‡mi GKwU `j‡K mgvb m`m¨ wewkó 9 wU `‡j fvM Kiv hvq, Avevi mgvb m`m¨ wewkó 15 wU `‡j I fvM Kiv hvq| H `‡j †gvU gfv‡mi msL¨v b¨bZg KZ n‡Z n‡e? A group of MOVers can be divided into 9 teams with an equal number of MOVers in each team or into 15 teams with an equal number of MOVers in each team. What is the lowest possible number of MOVers in the group?	45

WvP-evsjv e¨vsK - c_g Av‡jv MwYZ Drme 2010

চট্টগ্রাম আঞ্চলিক গণিত অলিম্পিয়াড

Av‡qvRK: evsjv‡`k MwYZ Awj¤úqvW KwgwU

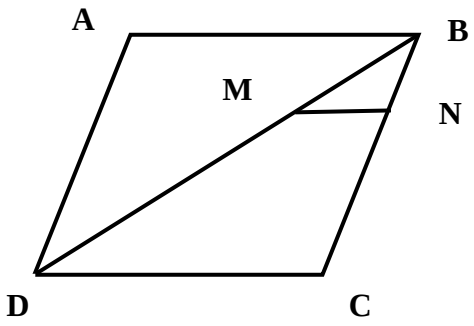
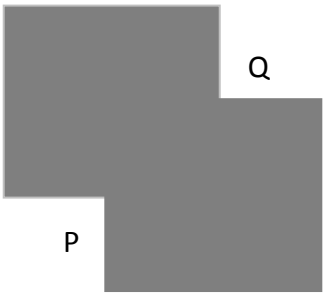
ক্যাটাগরি: জুনিয়র (৬ষ্ঠ-৮ম শ্রেণী) **সময়: ১ ঘন্টা ১৫ মিনিট**

নাম(বাংলায়): **শ্রেণী(২০০৯ সাল):**

Name (In English): **Registration No:**

[এই উত্তরপত্রের নির্দিষ্ট স্থানে উত্তর লিখতে হবে। খসড়ার জন্য পৃথক কাগজ ব্যবহার করতে হবে এবং তা জমা দিতে হবে। সকল সংখ্যা ইংরেজীতে লেখা হয়েছে। সবাইকে নিজ নিজ উত্তরপত্র জমা দিতে হবে।]

bs	ck	DËi
1.	MwYZ Awj¤úqv‡W gfv‡mi GKwU `j‡K mgvb m`m¨ wewkó 9 wU `‡j fvM Kiv hvq, Avevi mgvb m`m¨ wewkó 15 wU `‡jI fvM Kiv hvq| H `‡ji gfvm‡`i 5 m`‡m¨i mewbg KZ¸‡jv `‡j fvM Kiv hv‡e? A group of MOVers can be divided into 9 teams with an equal number of MOVers in each team or into 15 teams with an equal number of MOVers in each team. What is the minimum number of groups that can be formed with each group having 5 MOVers?	9
2.	Pvi A‡¼i †h KqwU msL¨v Av‡Q hv‡`i †_‡K 12 we‡qvM Ki‡j Zv 12 w`‡q, 13 we‡qvM Ki‡j Zv 13 w`‡q Ges 19 we‡qvM Ki‡j Zv 19 w`‡q fvM hvq †m msL¨v¸wj wbYq Ki| Find all the 4-digit numbers which are divisible by 12, 13 and 19 if 12, 13 and 19 are subtracted from the numbers respectively.	2964, 5928, 8892
3.	egeg ¯‹vDU‡`i m‡¤§j‡b wM‡q‡Q| †mLv‡b c‡Z¨K ¯‹vDU Ab¨ mevi mv‡_ Kig`b Kivi K_v| ‡KD †KD Avevi Kig`b K‡iwb| me‡gvU Kig`‡bi msL¨v 8 n‡j mewbg KZM‡jv Kig`b nqwb? Boomboom joined Scout Jamboree. Every scout was said to handshake with each other. Some of them did not do. The total number of handshakes was 2. Find the minimum number of handshakes which were not done?	2
4.	AfxK, m`xß I dimv` AÜKvi iv‡Z GKwU †mZ cvi n‡e| †mZ cvi n‡Z Zv‡`i h_vµ‡g 3π, 5π I 8π wgwbU mgq jv‡M| Zv‡`i nv‡Z †h UPjvBUwU Av‡Q †mwUi Av‡jv‡Z eo‡Rvo `BRb GKmv‡_ †mZ cvi n‡Z cv‡i| wZbR‡bi †mZwU cvi n‡Z mewbg KZ mgq jvM‡e? Avik, Sudipta and Forshad will cross a bridge in the night. They need 3π, 5π and 8π minutes respectively to cross the bridge. They have only one torch light. It is possible only for 2 persons to cross together with that torchlight. Find the smallest possible time needed for these 3 persons to cross the bridge.	16π = 50.27
5.	Wvg X Gi A‡aK †Zj w`‡q cY| Wvg Y Gi g‡a¨ X Gi wØ¸Y †Zj a‡i Ges eZgv‡b †mwUi `B ZZxqvsk †Zj w`‡q cY| X Gi me †Zj Y G †X‡j w`‡j Gi KZ Ask cY _vK‡e? Drum X is half full of oil and drum Y, which has twice the capacity of drum X, is two third full of oil. If all of the oil in drum X is poured into drum, then drum Y will be filled to what fraction of its capacity?	$^{11}/_{12}$
6.	2x + z = 2y Ges 2x + 2y + z = 20 n‡j y Gi gvb wbYq Ki| If 2x+z=2y and 2x+2y+z=20, what is the value of y?	5
7.	Ggb †gŠwjK msL¨v N wbYq Ki †hb 17N+3 GKwU †gŠwjK msL¨v nq| Find the prime number N for which 17N+3 is prime?	2

bs	ck	DËi
8.	 ABCD GKwU mvgvšÍiwiK Ges DC I MN ci¯úi mgvšÍivj| BN= $\frac{1}{3}$ BC| Δ BNM I □ ABCD Gi ক্ষেত্রফলের AbcvZ KZ? ABCD is a parallelogram and MN is parallel to to DC. The length of BN is 1/3 of the length of BC. What is the ratio of the area of triangle BNM to the area of the parallelogram ABCD?	$\frac{1}{18}$
9.	 cv‡ki wPÎwU‡Z mgvb evû wewkó GKwU eM Aci GKwU e‡Mi Dci Ae¯vb Ki‡Q| P I Q e‡Mi evûi ga¨we›`y| evûi ‰`N¨ 6 GKK| Qvqv Av”Qvw`Z c‡iv GjvKwUi ক্ষেত্রফল wbYq Ki| Two squares of length 6 are put in a position as the figure. P and Q are the midpoint. Find the total shaded area.	63
10.	`kwU µwgK cY msL¨vi c_g cvPwUi †hvMdj 560, c‡ii cvPwUi †hvMdj KZ? In an increasing sequence of 10 consecutive imtegers the sum of the first 5 integers is 560. What is the sum of last 5 integers in the sequence?	585
11.	n hw` 1 †_‡K 13 chšÍ msL¨v¸‡jvi ¸Ydj nq, Zvn‡j n Gi †gvU KZ¸‡jv †gŠwjK Drcv`K Av‡Q? If n is the product of the integers from 1 to 13, inclusive, how many prime factors greater than 1 does n have?	6
12.	¸ej cwZw`b UvKvi ev‡· Av‡Mi `B w`‡bi mgvb cwigvb UvKv Rgv K‡i| c_g `B w`b ¸ej 1 UvKv K‡i ev‡· ‡i‡LwQj| Aóg w`b †k‡l ¸eji ev‡· †gvU KZ UvKv Rgv nj? ¸ej cwZw`b M‡o KZ UvKv K‡i Rgvj? Everyday Gublu saves money in her money bank. Every day he saves as much as he saved in last two days. Gublu saved taka 1 on first two days. What will be the total amount of money in his bank after eight days? What is the average amount of money that he saved every day?	54; $^{54}/_{8}$=6.75

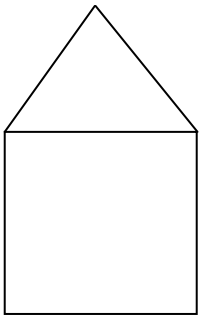
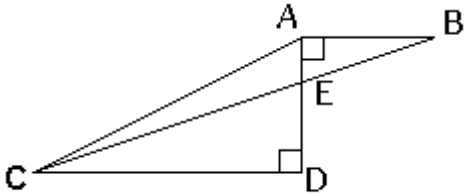
WvP-evsjv e¨vsK - c_g Av‡jv MÖYZ Drme 2010
চট্টগ্রাম আঞ্চলিক গণিত অলিম্পিয়াড
Av‡qvRK: evsjv‡`k MÖYZ Aw¦úqvW KwgwU

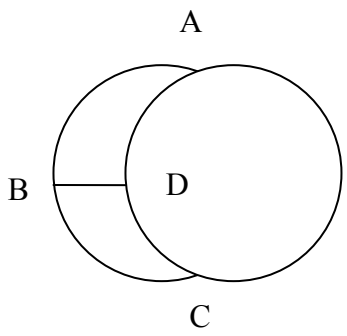
ক্যাটাগরি: সেকেন্ডারি(৯ম-১০ম শ্রেণী) **সময়: ১ ঘন্টা ১৫ মিনিট**

নাম(বাংলায়) **শ্রেণী(২০০৯ সাল):**

Name (In English): **Registration No:**

[এই উত্তরপত্রের নির্দিষ্ট স্থানে উত্তর লিখতে হবে। খসড়ার জন্য পৃথক কাগজ ব্যবহার করতে হবে এবং তা জমা দিতে হবে। সকল সংখ্যা ইংরেজীতে লেখা হয়েছে। সবাইকে নিজ নিজ উত্তরপত্র জমা দিতে হবে।]

bs	ck	DËi
1.	`kwU µwgK cY msL¨vi c_g cvPwUi †hvMdj 560, c‡ii cvPwUi †hvMdj KZ? In an increasing sequence of 10 consecutive imtegers the sum of the first 5 integers is 560. What is the sum of last 5 integers in the sequence?	585
2.	X †mUwU‡Z 20wU Akb¨ ev¯Íe msL¨v i‡q‡Q| Rev‡qi Zvi Ajm mg‡q GKwU †mU Y evbv‡jv hvi cwZwU Dcv`vb nj †m‡Ui cwZwU Dcv`v‡bi wecixZ (2 Gi wecixZ nj $^1/_2$)| Gici †m X Avi Y †mU `wUi me¸‡jv msL¨v‡K ¸Y K‡i w`j| ¸Ydj KZ? X set contains 20 non-zero real numbers. Jubaer, in his idle time, created a set Y that contains the reciprocals of the numbers of set X (reciprocal of 2 is $^1/_2$). Then he multiplied all the elements of set X and Y. What is the product?	1
3.	4wU wfb msL¨v‡K Ggb KZfv‡e ‡jLv †h‡Z cv‡i †hb Zviv eo †_‡K †QvU wKsev †QvU †_‡K eo AvKv‡i wjLv _vK‡e bv? In how many ways can four different numbers be arranged so that they are not arranged in increasing or decreasing order?	4!-2=22
4.	 The area of the square is $36m^2$ and all three angles of the triangle are x^0. Find the perimeter of the pentagon? eMwUi ক্ষেত্রফল 36 eMwgUvi| wÎfRwUi cwZwU †Kv‡Yi cwigvc x^0 n‡j cÂfRwUi cwimxgv KZ n‡e?	30
5.	x I y abvZK cYmsL¨v †hLv‡b $x^2 = y^3$| $(x+y)$ Gi mewbg gvb wbYq Ki| If both x and y are positive integer greater than one satisfying the equation: $x^2=y^3$, then what is the minimum value of $(x+y)$?	12
6.	 wP‡Î AD = 4, AB = 3 Ges CD = 9| Δ AEC Gi ক্ষেত্রফল KZ? In the figure above AD = 4, AB = 3 and CD = 9. What is the area of	4.5

bs	ck	DËi
	triangle Δ AEC?	
7.	n hw` 1 †_‡K 8 chš Í msL¨v¸‡jvi ¸Ydj nq, Zvn‡j n Gi †gvU KZ¸‡jv †gŠwjK Drcv`K Av‡Q? If n is the product of the integers from 1 to 8, inclusive, how many prime factors greater than 1 does n have?	4
8.	 `wU mgvb eË ci¯úi‡K A I C we›`‡Z ‡Q` K‡i Ges B I D Pvc `wUi ga¨we›`| AC ‡iLv‡ki ^`N¨ 24cm I BD=10cm n‡j e‡Ëi e¨vmva wbYq Ki| The crescent moon ABCD is formed with two arcs ABC and ADC which are parts of two equal circles (B and D are midpoints of the circles). Line segment AC=24 cm and BD=10cm. Find the radius of the circle.	13
9.	GKwU e‡Ëi cwiwai Dci n msL¨K we›` Av‡Q| we›`¸‡jv †hvM K‡i GKwU n fR ^Zwi Kiv nj| D³ n f‡Ri †gvU 20wU KY Av‡Q| n=? There are n points in the circumference of a circle. By connecting these points n-gon is made. The number of diagonals of the n-gon is 20. Find the value of n?	8
10.	N Ges P, 1 Gi †P‡q eo †Kvb cYmsL¨v| P, N+4 Ges N+14 Gi Drcv`K| P Gi gvb¸‡jv wbYq Ki? If N and P are integers greater than 1 and if P is a factor of both N+4 and N+14, what are the values of P?	2, 5,10
11.	θ Ggb GKwU Acv‡iUi †hb a θ b= $\frac{a-b}{a+b}$ Ges a ≠ -b	hw` a ≠ -c Ges a θ c = 0 nq Zvn‡j c =? An operation θ is defined by the equation a θ b= $\frac{a-b}{a+b}$ for all numbers a and b such that a ≠ -b. If a ≠ -c and a θ c = 0 then c =?	a
12.	1 †_‡K 1000 chš Í Ggb KqwU cYmsL¨v Av‡Q hviv 3 A_ev 7 Øviv wefvR¨| How many numbers from 1 to 1000 are divisible by 3 or 7?	428

WvP-evsjv e¨vsK - c_g Av‡jv MwYZ Drme 2010

চট্টগ্রাম আঞ্চলিক গণিত অলিম্পিয়াড

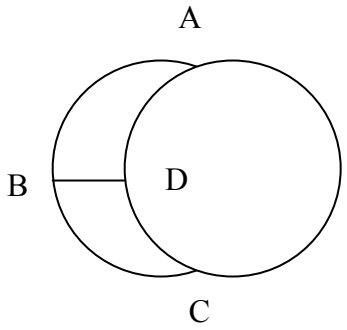
Av‡qvRK: evsjv‡`k MwYZ Awj¤úqvW KwgwU

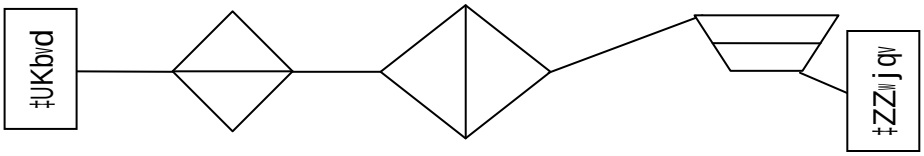
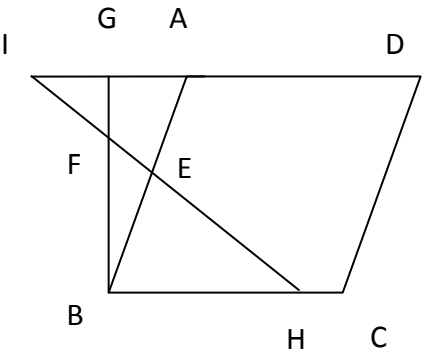
ক্যাটাগরি: হায়ার সেকেন্ডারি (একাদশ-দ্বাদশ-এইচএসসি) **সময়: ১ ঘন্টা ১৫ মিনিট**

নাম(বাংলায়): **শ্রেণী(২০০৯ সাল):**

Name (In English): **Registration No:**

[এই উত্তরপত্রের নির্দিষ্ট স্থানে উত্তর লিখতে হবে। খসড়ার জন্য পৃথক কাগজ ব্যবহার করতে হবে এবং তা জমা দিতে হবে। সকল সংখ্যা ইংরেজীতে লেখা হয়েছে। সবাইকে নিজ নিজ উত্তরপত্র জমা দিতে হবে।]

bs	ck	DËi
1.	egeg ¯vDU‡`i m‡¤§j‡b wM‡q‡Q| †mLv‡b c‡Z¨K ¯vDU Ab¨ mevi mv‡_ Kig`b Kivi K_v| ‡KD †KD Avevi Kig`b K‡iwb| me‡gvU Kig`‡bi msL¨v 7 n‡j mewbg KZM‡jv Kig`b nqwb? Boomboom joined Scout Jamboree. Every scout was said to handshake with each other. Some of them did not do. The total number of handshakes was 7. Find the minimum number of handshakes which were not done?	3
2.	 `wU mgvb eË ci¯úi‡K A I C we›`‡Z ‡Q` K‡i Ges B I D Pvc `wUi ga¨we›`| AC ‡iLvs‡ki ^`N¨ 24cm I BD=10cm n‡j e‡Ëi e¨vmva wbYq Ki| The crescent moon ABCD is formed with two arcs ABC and ADC which are parts of two equal circles (B and D are midpoints of the circles). Line segment AC=24 cm and BD=10cm. Find the radius of the circle.	13
3.	bv‡Ui ewo‡Z 5 †Rvov RZv i‡q‡Q| GjvKvi KL¨vZ †Pvi eë GK iv‡Z bv‡Ui RZv¸‡jv †_‡K 3wU RZv wb‡q cvjv‡jv| H 3wU RZvi g‡a¨ GKwU †Rvov cvevi m¤vebv KZ? Naat has 5 pairs of shoes in his house. One night, a locally well known thief called Boltu came to Naat's house and stole 3 shoes randomly. What is the probability that there was a pair of shoes in those 3 shoes?	$^1/_3$ = 0.33
4.	1 †_‡K 1000 chš Í Ggb KqwU cYmsL¨v Av‡Q hv 3 wKsev 6 Gi ¸wYZK wKš 5 Gi ¸wYZK bq? From 1 to 1000, how many integers are multiples of 3 or 6 but not of 5?	378
5.	1 †_‡K 12 chš Í msL¨v¸‡jvi jmv¸ Ges 1 †_‡K 11 chš Í msL¨v¸‡jvi jmv¸ Gi we‡qvMdj KZ? What is the difference between L.C.M. of all the numbers from 1 to 12 and L.C.M of all the numbers from 1 to 11?	0
6.	$2^{1024} + 5^{1024}$ †K 3 Øviv fvM Ki‡j KZ Aewkó _vK‡e? What is the remainder when $2^{1024} + 5^{1024}$ is divided by 3?	2
7.	`BwU mgvš Íivj mij‡iLvi GKwU‡Z 5wU I AciwU‡Z 4wU we›` Av‡Q| we›`¸‡jv †hvM K‡i †gvU 20wU mij †iLvsk ^Zwi Kiv nj| mij‡iLvsk¸‡jv wb‡R‡`i g‡a¨ †gvU KZ¸‡jv †Q`we›` ^Zwi Ki‡e? hw` mgvš Íivj mij†iLv `wU‡Z m I n msL¨K we›` _v‡K Zvn‡j KZwU †Q`we›` ^Zwi n‡e? There are 5 points and 4 points on two parallel lines respectively. Connecting all the points 20 lines have been found. How many intersecting points have been created by these 20 lines? If there are m & n points on the parallel lines then what will be the number of intersecting points?	60 $^mC_2 \times ^nC_2$

bs	ck	DËi
8.	N Ges P, 1 Gi †P‡q eo †Kvb cYmsL¨v| P, N+4 Ges N+12 Gi Drcv`K| P Gi gvb¸‡jv wbYq Ki? If N and P are integers greater than 1 and if P is a factor of both N+4 and N+12, what are the values of P?	2, 4, 8
9.	$f(x) = \frac{x^2}{\sqrt{x}}$ n‡j f Gi †iÄ KZ ‡hLv‡b $x \in R$? What is the range of f where $f(x) = \frac{x^2}{x}$ and $x \in R$	$R_+ - \{0\}$
10.	 mij‡iLv Øviv GB Qwe‡Z †UKbvd †_‡K †ZZwjqv hvIqvi mKj c_ †`Lv‡bv n‡q‡Q| Rbve Bewmg Lwjjgvnh bex †UKbvd †_‡K †ZZwjqv hv‡e, †mLv‡b wM‡q †m GKwU iwUi UKiv ci¯vi wn‡m‡e cv‡e| cwZevi hvIqvi mgq GKB RvqMvq `Bevi bv G‡m †m †gvU KZfv‡e †UKbvd †_‡K †ZZwjqv †h‡Z cvi‡e? The diagram above shows the various paths along which Mr. Ibrahim Khalilullah Nobi can travel from point Teknaf, where it is released, to point Tetulia, where it is rewarded with a food pellet. How many different paths from Teknaf to Tetulia can Nobi take if it goes directly from Teknaf to Tetulia without retracting any point along a path?	48
11.	GKwU Nb‡Ki `wU mwbwnZ cv‡ki is wfb| NbKwU is Ki‡Z mewbg KqwU is jvM‡e? No two adjacent faces of a cube are of same color. What is the minimum number of colors needed to paint a regular cube?	3
12.	 ABCD GKwU i¤m| 2CH=AE=BE=4 Ges BG⊥AD| ∠ABC=60^0 n‡j FG=? In ABCD rhombus 2CH=AE=BE=4 and BG⊥AD. If ∠ABC=60^0 then find the value of FG.	$\sqrt{3}$
13.	$\frac{x+2}{8}$, 2 Gi †P‡q eo GKwU cYmsL¨v| x ‡K 8 Øviv fvM Ki‡j KZ Aewkó _vK‡e? If $\frac{x+2}{8}$ is an integer greater than 2, find the remainder when x is divided by 8.	6