Brain International School

Vikas Puri, New Delhi

REVISION SHEET

SUBJECT: MATHEMATICS CLASS-XI JANUARY,2026

Q1.	If A and B are two sets, then $A \cap (A \cup B)$ equals			
	(a) A	(b) B	(c) ϕ	(d) $A \cap B$
Q2.	The number of non-empty subsets of a set, containing n elements, is			
	(a) n	(b) n^2	(c) 2^n	(d) $2^n - 1$
Q3.	Which of the following statement is false?			
	(a) $A - B = A \cap B'$		(b) $A - B = A - (A \cap B)$	
	(c) $A - B = A - B'$		(d) $A - B = (A \cup B) - B$	
Q4.	Let R be a relation on N defined by $R = \{(x, y): x + 2y = 8, x, y \in N\}$. Then domain of R is			
	(a) {2, 4, 8}	(b) {2, 4, 6, 8}	(c) {2, 4, 6}	(d) {1, 2, 3, 4}
Q5.	If $f(x) = x^3 - \frac{1}{x^3}$, then $f(x) + f\left(\frac{1}{x}\right)$ is equal to			
	(a) $2x^3$	(b) $\frac{2}{x^3}$	(c) 0	(d) 1
Q6.	If $f(x) = ax + b$, where a and b are integers, such that f(-1) = -5 nad f(3) = 3, then a and b are equal to			
	(a) -3, -1	(b) 2, -3	(c) 0, 2	(d) 2, 3
Q7.	The value of tan 1°.tan 2°.tan 3°…tan 89° is			
	(a) 0	(b) 1	(c) ½	(d) not defined
Q8.	Which of the following is not correct?			
	(a) $\sin\theta = -\frac{1}{5}$	(b) $\cos\theta = 1$	(c) $\sec\theta = ½$	(d) $\tan\theta = 20$
Q9.	The value of tan 75° – cot 75° is			
	(a) $2\sqrt{3}$	(b) 4	(c) 1	(d) 0
Q10.	If $-(x - 3) + 4 < 5 - 2x$, then x belongs to			
	(a) $(-\infty, 2)$	(b) $(-\infty, -2)$	(c) $(2, \infty)$	(d) $(-2, \infty)$
Q11.	If $10 \leq -5(x - 2) < 20$, then x belongs to			
	(a) (-2, 0]	(b) (-2, 0)	(c) [-2, 0)	(d) [-2, 0]

Find all pairs of consecutive even positive integers, both of which are larger than 8, such that their sum is less than 25.

OR

Solve the following for real x

$\frac{x-1}{3} + 4 < \frac{x-5}{5} - 2$

Using binomial theorem, evaluate the following

$(\sqrt{2}+1)^4 + (\sqrt{2}-1)^4$

Find the locus of the point which is equidistant from the points A(0, 2, 3) and B(2, -2, 1).

Differentiate the function $\frac{\sin(x+a)}{\cos x}$ with respect to x.

Find the value of x, such that $\frac{3+2i\sin x}{1-2i\sin x}$ is purely imaginary.

OR

If α and β are different complex numbers with $|\beta| = 1$, find the value of $\left|\frac{\beta-\alpha}{1-\bar{\alpha}\beta}\right|$

In a school library, 5 Hindi novels and 5 English novels are available. A student has to select 4 novels out of them. In how many ways he can do it, if

(i) he has to select 2 Hindi and 2 English novels

(ii) he has to select at least 2 Hindi novels

(iii) he has to select at least one novel from each language.

Find the derivative of $f(x) = \sin x^2$ by first principle .

OR

Find the derivatives of following functions with respect to x

(i) $(ax+b)^n.(cx+d)^m$ (ii) $\frac{\sin x+\cos x}{\sin x-\cos x}$

Show that the area of the triangle formed by the lines $y = m_1x + c_1$, $y = m_2x + c_2$ and $x = 0$ is $\frac{(c_1-c_2)^2}{2|m_1-m_2|}$.

Find the mean using step deviation method

Height in cm	**70-80**	**80-90**	**90-100**	**100-110**	**110-120**
No. of children	**7**	**14**	**24**	**12**	**3**