New 9th Mathematics Full Book MCQs

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Ch.# 01 (Real Numbers)

S.N.	Questions	A	B	C	D
1	$\sqrt{7}$ *is*:	Integer	Rational Number	Irrational Number✓	Natural Number
2	π *and* e *are*:	Natural Numbers	Integers	Rational Numbers	Irrational Numbers ✓
3	If n is not a perfect square, then $\sqrt{n}$ is:	Rational Number	Natural Number	Integer	Irrational Number ✓
4	$\sqrt{3}+\sqrt{5}$ *is*:	Whole Number	Integer	Rational Number	Irrational Number ✓
5	For all $x \in R, x = x$ is called:	Reflexive Property ✓	Transitive Number	Symmetric Property	Trichotomy Property
6	Let $a, b, c \in R$, *then* $a > b$ *and* $b > c \Rightarrow a > c$ is called ---- property.	Trichotomy	Transitive ✓	Additive	Multiplicative
7	$2^x \times 8^x = 64$ *then* $x =$ _	$\frac{3}{2}$ ✓	$\frac{3}{4}$	$\frac{5}{6}$	$\frac{2}{3}$
8	Let $a, b \in R$, *then* $a = b$ *and* $b = a$ is called ----- property.	Reflexive	Symmetric ✓	Transitive	Additive
9	$\sqrt{75}+\sqrt{27} =$ ____	$\sqrt{102}$	$9\sqrt{3}$	$5\sqrt{3}$	$8\sqrt{3}$ ✓
10	The product of $(3+\sqrt{5})(3-\sqrt{5})$ is:	Prime Number	Odd Number	Irrational Number	Rational Number ✓
11	Sumerians time period was ---------- BCE.	4500 – 1900 ✓	3500 – 1900	4500 – 1700	2500 – 1900
12	Sumerians(4500 – 1900 BCE) used a --- system for counting.	Sexagesimal	Base 60	Both A & B ✓	None of these
13	Egyptians time period was ---------- BCE.	3000 – 1900	3500 – 2000	3000 – 2000 ✓	2500 – 2000
14	Egyptians (3000 – 2000 BCE) used a --- system for counting.	Decimal	Base 10	Both A & B ✓	None of these
15	A roman time period was ----.	$500BCE - 500CE$ ✓	$200BCE - 500CE$	$500BCE - 200CE$	$1500BCE - 1500CE$

16	Romans ($500BCE - 500CE$) used ---- numerals system for counting.	Indians	Arabs	Romans ✓	None
17	Romans used --- letter for 1.	I ✓	V	X	L
18	Romans used --- letter for 5.	C	X	V ✓	D
19	Romans used --- letter for 10.	V	M	L	X ✓
20	Romans used --- letter for 50.	C	D	L ✓	M
21	Romans used --- letter for 100.	L	C ✓	D	M
22	Romans used --- letter for 500.	V	L	X	D ✓
23	Romans used -- letter for 1000.	X	M ✓	V	I
24	Indians time period was --- CE.	$100 - 500$	$500 - 1200$ ✓	$700 - 1300$	$900 - 1300$
25	--------- developed the concept of zero (0).	Romans	Arabs	Egyptians	Indians ✓
26	The number system used today was invented by ---- and it is still called Indo-Arabic numerals.	✓ Indians	Arabs	Both A & B	None of these
27	Arabs time period was --- CE.	$800 - 1200$	$800 - 1500$ ✓	$700 - 1300$	$600 - 1400$
28	--------- introduced numerals $(0 - 9)$ to Europe.	Indians	✓ Arabs	Both A & B	None of these
29	The ----- system is the basis for modern decimal system used globally today.	Romans	Sumerians	Indians	Arabic ✓
30	Modern era time period is ---- to present.	1500	1700✓	1800	1900
31	Modern era (1700 – present) developed modern number system e.g. binary system base ---------.	2 ✓	10	60	16
32	Modern era (1700 – present) developed modern number system e.g. hexadecimal system base ---------.	2	10	60	16 ✓

33	Real numbers is the union of the set of ----- & ------ numbers.	Rational	Irrational	Both A & B ✓	None
34	Non-terminating and non-recurring decimal numbers are called ---------.	Rational	Irrational ✓	Both A & B	None
35	Non-terminating and recurring decimal numbers are called ----------.	Rational ✓	Irrational	Whole Number	None
36	Terminating decimal numbers are called ------.	Rational ✓	Irrational	Natural Number	None
37	Which number is not a irrational number.	π	e	$\frac{22}{7}$ ✓	$\sqrt{2}$
38	$e = 2.7182$ ... is called _____ number.	Newton's	Euler's ✓	Rational	Prime
39	Rational no. + Irrational no. =---------- number.	Rational	Irrational ✓	Both A & B	None
40	Rational no.($\neq 0$) × Irrational no.=----------	Rational	Irrational ✓	Both A & B	None
41	--------- has no multiplicative inverse.	0 ✓	1	2	All of these
42	--------- is the additive identity of real numbers.	1	0 ✓	10	None of these
43	--------- is the multiplicative identity of real numbers.	0	1 ✓	5	None of these
44	What will be the product of two irrational numbers?	Rational	Irrational	Both A & B ✓	None
45	A real number under the radical sign ($\sqrt{\ }$) is called ---.	Radical	Index of Radical	Radicand ✓	None of these
46	$\sqrt[3]{5}$ here radical index is ----	5	3 ✓	Both A & B	None
47	An irrational radical with rational radicand is called ----.	Surd ✓	Radical Index	Conjugate	None of these
48	$\sqrt{9}$ is ----- number.	Rational ✓	Irrational	Both A & B	None
49	Which number is a surd.	$\sqrt{\pi}$	$\sqrt{e}$	$\sqrt[3]{27}$	$\sqrt[3]{11}$ ✓
50	Every surd is an irrational number but every irrational number is not a ----.	Surd ✓	Real number	Irrational	All of these
51	A surd that contains a single term is called ------- surd.	Trinomial	Binomial	Monomial ✓	Conjugate

52	A surd that contains the sum of two monomial surds OR one monomial & other rational number is called ------.	Monomial	Binomial ✓	Trinomial	None
53	Which of the following is a binomial surd?	$\sqrt{2}+3$	$\sqrt{2}-\sqrt{3}$	Both A & B ✓	$\sqrt{5}$
54	$\sqrt{a}+\sqrt{b}$ and $\sqrt{a}-\sqrt{b}$ are called --- surds of each other.	Trinomial	Binomial	Monomial	Conjugate ✓
55	Write $\sqrt[7]{x}$ in exponential form	x	x^7	$x^{1/7}$ ✓	$x^{7/2}$
56	$\left(\frac{24}{16}\right)^{-1/2}$	$\frac{5}{4}$	$\frac{4}{5}$ ✓	$-\frac{5}{4}$	$-\frac{4}{5}$
57	Name the property of real numbers used in $\left(-\frac{\sqrt{5}}{2}\right)\times 1=-\frac{\sqrt{5}}{2}$	Additive Identity	Additive Inverse	Multiplicative Identity ✓	None
58	If $x,y,z\in R, z<0$ then $x<y \Rightarrow$ _____.	$xz<yz$	$xz>yz$ ✓	$xz=yz$	None of these
59	Division is not holding ____ property.	Commutative	Associative	Both A & B ✓	None
60	Every whole number is a ____ number.	Natural	Rational ✓	Irrational	All of these
61	Subtraction is holding ____ property.	Commutative	Associative	Distributive ✓	All of these
62	The symbol ∀ means:	And	Belong to	Union	For all ✓
63	$(a^{-1})^{-1}=$ ____	a^{-1}	a ✓	Both A & B	None
64	$\sqrt[2]{a}$ is usually written as:	$(a)^2$	$(\sqrt{a})^2$	$\sqrt{a}$ ✓	$\sqrt{a^2}$
65	If Q and Q' are rational and irrational numbers then:	$Q\cap Q'=R$	$Q\cup Q'=N$	$Q\cap Q'=Z$	$Q\cup Q'=R$ ✓
66	$\sqrt[n]{a^n}=$ _____	a^n	a ✓	$a^{1/n}$	$a^{2/n}$
67	$5^{2^3}=$ _____	5^6	5^9	5^8 ✓	None of these
68	$a^0=$ ____ ,where $a\neq 0$	1 ✓	a	0	All of these
69	$4^{2/5}$ with radical sign is:	$\sqrt[5]{4^2}$ ✔	$\sqrt{4^2}$	$\sqrt[2]{4^5}$	$\sqrt{4^{10}}$

70	An expression involving a square root, cube root, fourth root or nth root is called ____ expression.	Exponential	Reciprocal	Radical ✓	All of these
		Ch.# 02 { Logarithms}			
71	The standard form of 5.2×10^6 is:	52,000	520,000	5,200,000 ✓	52,000,000
72	Scientific notation of 0.00034 is:	3.4×10^3	3.4×10^{-4} ✓	3.4×10^4	3.4×10^{-3}
73	The base of common logarithm is:	2	10 ✓	7	e
74	The base of natural logarithm is:	3	10	5	e ✓
75	$\log_2 2^3 =$ _____	1	2	5	3 ✓
76	$\log 100 =$ _____	2 ✓	3	10	1
77	If $\log 2 = 0.3010$, then $\log 200$ is:	1.3010	0.6010	2.3010 ✓	2.6010
78	$\ln(0)$ OR $\log(0) =$ ____	Positive	Negative	Zero	Undefined ✓
79	$\log 10{,}000 =$ _____	2	3	4 ✓	5
80	$\log\left(\frac{1}{a}\right) =$ _____	$\log 1$	$\log a$	$-\log a$ ✓	None
81	$\log 5 + \log 3 =$ ____	$\log 0$	$\log 2$	$\log\left(\frac{5}{3}\right)$	$\log 15$ ✓
82	$3^4 = 81$ in logarithmic form is:	$\log_3 4 = 81$	$\log_4 3 = 81$	$\log_3 81 = 4$ ✓	$\log_4 81 = 3$
82	A method used to express very large or very small numbers in a more manageable form is known as --------.	Scientific Notation ✓	Standard Form	Common Notation	Ordinary Notation
83	The ----- of a real number tells us how many times one number must be multiplied by itself to get another number.	Logarithm ✓	Anti-logarithm	Scientific Notation	None of these
84	Ordinary notation of 6.6×10^{-5} will be --------- .	66000	6600000	0.0000066	0.000066 ✓

85	$\log_b(x) = y \Leftrightarrow b^y =$ x where $b > 0, x > 0$ *and* $b \neq$ __	1 ✓	2	5	3
86	Who introduced logarithmic table?	Henry Briggs ✓	John Napier	Leonhard Euler	None of these
87	The characteristic is the ____ part of the logarithm.	Decimal	Fractional	Integral ✓	None of these
88	The mantissa is the ____ part of the logarithm.	Decimal ✓	Integral	Both A & B	None of these
89	$\ln(1)$ OR $\log(1) =$ ____	1	2	5	0 ✓
90	$\ln(e)$ OR $\log_a(a) =$ ___	1 ✓	3	0	4
91	An antilogarithm is the inverse operation of a _____.	Addition	Subtraction	Division	Logarithm ✓
92	When no base is mentioned, it is usually assumed to be base ___.	2	10 ✓	5	e
93	$e =$ _____	3.14159 ...	3.14 ...	2.82871 ...	2.718281 ...✓
94	The natural logarithm is written as _____.	$\log_{10}(x)$	$\log_x(10)$	$\log_{10}(100)$	$\ln(x)$ ✓
95	$\log_b xy =$ _____	$\log_b x +$ $\log_b y$ ✓	$\log_b x$ $-\log_b y$	$\log_b x$ $\times \log_b y$	$\log_b x$ $\div \log_b y$
96	The logarithm of the product is the ____ of the logarithms of the factors.	Difference	Sum ✓	Product	Power
97	The logarithm of the product is the sum of the logarithms of the factors is called _____ law.	Product ✓	Quotient	Power	Change of Base
98	$\log_b\left(\frac{x}{y}\right) =$ _____	$\log_b x$ $+\log_b y$	$\log_b x -$ $\log_b y$ ✓	$\log_b x$ $\times \log_b y$	$\log_b x$ $\div \log_b y$
99	The logarithm of a quotient is the __ between the logarithms of the numerator and the denominator.	Sum	Difference ✓	Product	Power

100	The logarithm of a quotient is the difference between the logarithms of the numerator and the denominator is called -- law.	Product	Quotient ✓	Power	Change of Base
101	$\log_b x^n =$ _____	$x.\log_b n$	$n.\log_n b$	$n.\log_b x$ ✓	None of these
102	The logarithm of a number raised to a power is the ____ of the power and the logarithm of the base number.	Product ✓	Quotient	Power	Sum
103	The logarithm of a number raised to a power is the product of the power and the logarithm of the base number is called ____ law.	Product	Quotient	Power ✓	Change of Base
104	$\log_b x =$ _____	$\frac{\log_a x}{\log_a b}$ ✓	$\frac{\log_a x}{\log_y b}$	$\frac{\log_a b}{\log_a x}$	None of these
105	_____ Law allows changing the base of a logarithm from "b" to any other base "a".	Product	Quotient	Power	Change of Base ✓
106	$\log_{10} 10 =$ _____	1 ✓	2	5	0
107	The place between the first non-zero digit from left and its next digit is called _____.	Scientific Notation	Standard Form	Common Notation	Reference Position ✓
	Ch.# 03 { Sets and Functions}				
108	The set builder form of the set $\left\{1, \frac{1}{3}, \frac{1}{5}, \frac{1}{7}, \ldots\right\}$ is:	$\left\{x \mid x = \frac{1}{n}, n \in W\right\}$	$\left\{x \mid x = \frac{1}{2n+1}, n \in W\right\}$ ✓	$\left\{x \mid x = \frac{1}{n+1}, n \in W\right\}$	$\{x \mid x = 2n+1, n \in W\}$
109	If $A = \{\}$, then $P(A)$ is:	$\{\}$	$\{1\}$	$\{\{\}\}$ ✓	ϕ
110	If $U = \{1,2,3,4,5\}, A = \{1,2,3\}$ and $B = \{3,4,5\}$ then $U - (A \cap B)$ is:	$\{1, 2, 4, 5\}$ ✓	$\{2, 3\}$	$\{1, 3, 4, 5\}$	$\{1, 2, 3\}$
111	If A and B are overlapping sets, then $n(A - B)$ is equal to	$n(A)$	$n(B)$	$A \cap B$	$n(A) - n(A \cap B)$ ✓
112	If $A \subseteq B$ and $B - A \neq \phi$ then $n(A \cap B) =$:	0	$n(B)$	$n(A)$	$n(B) - n(A)$ ✓

113	If $n(A \cup B) = 50, n(A) = 30$ and $n(B) = 35$ then $n(A \cap B) =$:	23	✓ 15	9	40
114	If $A = \{1, 2, 3, 4\}$ and $B = \{x, y, z\}$, then cartesian product of A and B contains exactly ____ elements.	13	12 ✓	10	6
115	If $f(x) = x^2 - 3x + 2$, then the value of $f(a + 1)$ is equal to:	$a + 1$	$a^2 + 1$	$a^2 + 2a + 1$	$a^2 - a$ ✓
116	Given that $f(x) = 3x + 1$, if $f(x) = 28$, then the value of x is:	9 ✓	27	3	18
117	Let $A = \{1, 2, 3\}$ and $B = \{a, b\}$ two non-empty sets and $f: A \longrightarrow B$ be a function defined as $f = \{(1, a), (2, b), (3, b)\}$, then which of the following statement is true?	f is injective	f is surjective ✓	f is Bijective	f is into only
118	_____ is the science of patterns, structures, and relationships, comprising various branches that explore and analyze our world's logical and quantitative aspects.	Biology	Chemistry	Physics	Mathematics ✓
119	A famous sequence 0, 1, 1, 2, 3, 5, 8, 13, 21, ..., known as the _____ sequence.	Arithmetic	Harmonic	Fibonacci ✓	Geometric
120	Fibonacci sequence starts with two terms, 0 and 1. Each term of the sequence is obtained by adding the previous ----- terms.	2 ✓	3	4	5
121	Georg Cantor (1845-1918) was a ____ mathematician.	England	German ✓	Italy	France
122	------ significantly development of set theory, a key area in Mathematics.	Newton	Pythagoras	Euclid	Cantor ✓
123	A well-defined collection of distinct objects, numbers or elements is called ------.	Function	Set ✓	Relation	None
124	---- letters are generally used as names of sets.	Capital ✓	Small	Both A & B	None

125	---- letters are used as members or elements of sets.	Capital	Small ✓	Both A & B	None
126	How many ways to describe a set?	2	3 ✓	4	5
127	A set may be described in words is called -------- form/ method.	Descriptive ✓	Tabular	Set-builder	None
128	A set may be described by listing its elements within brackets are known as ------ form/ method.	Descriptive	Tabular ✓	Set-builder	None of these
129	A set may be described by using a symbol or letter for an arbitrary set member and stating the property common to all the members that is called as ------ form/ method.	Descriptive	Tabular	Set-builder ✓	None
130	The symbol " ∈ " means ------.	For all	Belong to ✓	Not belong to	Such that
131	The symbol "∀" means ------.	For all ✓	Belong to	Not belong to	Such that
132	A set with only one element is called a ----- set.	Universal	Singleton ✓	Void	Null
133	The set with no elements (zero number of elements) is called a/an ----- set.	Empty	Null	Void	All of these ✓
134	The empty set is denoted by the --------- symbol.	ϕ	{ }	{ ϕ }	Both A & B ✓
135	If two sets A and B they have exactly the same elements is known as ------ sets.	Equal ✓	Equivalent	Subset	Power
136	If two sets A and B they have the same number of elements is called -------- sets.	Equal	Equivalent ✓	Subset	Power
137	If every element of a set A is an element of set B, then A is a ---- of B.	Super set	Universal set	Subset ✓	All of these
138	----- symbol used for subset.	$\subseteq$ ✓	$\supseteq$	$\ni$	$\notin$
139	----- symbol used for superset.	$\subseteq$	$\supseteq$ ✓	$\ni$	$\notin$

140	If A is a subset of B and B contains at least one element that is not an element of A, then A is said to be a ---- subset of B.	Proper ✓	Improper	Both A & B	None of these
141	If A is a subset of B and A = B, then we say that A is a /an ---- subset of B.	Proper	Improper ✓	Both A & B	None of these
142	Every set is a ---- of itself.	Subset ✓	Super set	Universal set	All of these
143	Every set is a subset of itself and is called an/a ---- subset.	Proper	Improper ✓	Both A & B	None of these
144	-------- symbol used for proper subset.	$\subseteq$	$\supseteq$	$\subset$ ✓	$\supset$
145	When we do not want to distinguish between proper and improper subsets, we may use the ----- symbol for the relationship.	$\subseteq$ ✓	$\supseteq$	$\subset$	$\uplus$
146	Which of the following is a correct order?	$N \subset W \subset Z \subset Q \subset R$ ✓	$N \subset Z \subset W \subset Q \subset R$	$W \subset N \subset Z \subset Q \subset R$	$N \subset W \subset Q \subset Z \subset R$
147	---- is subset of every set.	Universal set	Power set	Empty set ✓	Super set
148	The set that contains all objects or elements under consideration is called the ------ set.	Universe of discourse	Universal ✓	Both A & B	None
149	Universal set is denoted by ----.	$\uplus$	$\cap$	U ✓	V
150	The set containing all the possible subsets of any set is known as ------.	Proper subset	Super set	Universal set	Power set ✓
151	Which of the following is a singleton set?	{ }	{ 1,2 }	{0} ✓	None of these
152	The number of elements in a mathematical set is called ----------.	Cardinality of a set ✓	Union of sets	Intersection of a set	All of these
153	Which of the following is a finite set	{2, 4, 6, ...}	{x | x ∈ P}	{a, b, c, d} ✓	{x | x ∈ N}
154	What is the power set of {1, 2}?	{{ }, {1}, {2}}	{{ }, {1}, {2}, {1,2}} ✓	{{1}, {2}, {1,2}}	{{1,2}}
155	Which of the following operations are verified in sets?	Commutative	Associative	Distributive	All of these ✓

156	Which of the following are De Morgan's Laws?	$(A \cup B)' = A' \cap B'$	$(A \cap B)' = A' \cup B'$	Both A & B ✓	None
157	Any subset of $A \times B$ is called---	Binary Relation ✓	Function	Domain	Co-domain
158	The set of the first elements of the ordered pairs forming is called its ------	Relation	Domain ✓	Co-domain	Range
159	The set of the second elements of the ordered pairs forming is called its ------.	Relation	Domain	Co-domain	Range ✓
160	Each ordered pair consists of two coordinates, x and y. The x coordinate is called -------.	Abscissa ✓	Ordinate	Both A & B	None
161	Each ordered pair consists of two coordinates, x and y. The y coordinate is called -------.	Abscissa	Ordinate ✓	Both A & B	None
162	Every function is a -------.	Relation ✓	Mapping	Domain	Range
163	Every relation is not a ----.	Relation	Function ✓	Domain	Range
164	The function $\{(x,y)\|y = mx + c\}$ is called ---- function.	Linear ✓	Quadratic	Cubic	Biquadratic
165	The function $\{(x,y)\|y = ax^2 + bx + c\}$ is called ---- function.	Linear	Quadratic ✓	Cubic	Biquadratic
166	Which of the following is NOT a type of function in mathematics?	One-to-One Function	Many-to-One Function	Constant Function	Undefined Function ✓
167	If a function maps each input to a unique output, it is called a ---	Many to one Function	One to one Function ✓	Onto Function	Constant Function
168	A function where every element of the codomain has at least one preimage is called:	Injective Function	Surjective Function ✓	Bijective Function	Constant Function
169	A function that is both one-to-one and onto is known as a -------	Injective Function	Surjective Function	Bijective Function ✓	Many-to-One Function
170	Which type of function always returns the same output regardless of input?	Linear Function	Identity Function	Constant Function ✓	Quadratic Function

171	The function f(x) = x is an example of:	Identity Function ✓	Constant Function	Quadratic Function	Cubic Function
172	The inverse of a bijective function is always:	A function ✓	Not a Function	A Quadratic Function	A Constant Function
173	$A \cup A' =$ _____	A	U ✓	A'	ϕ
174	$A \cap U =$ _____	A ✓	U	A'	ϕ
175	$A \cap A' =$ _____	A	U	A'	ϕ ✓
	Ch.# 04 { Factorization and Algebraic Manipulation }				
176	The factorization of $12x + 36$.	$12(x + 3)$ ✓	$12(3x)$	$12(3x + 1)$	$x(12 + 36x)$
177	The factors of $4x^2 - 12y + 9$ are:	$(2x + 3)^2$	$(2x - 3)^2$ ✓	$(2x - 3)$ $(2x + 3)$	$(2 + 3x)$ $(2 - 3x)^2$
178	The HCF of a^3b^3 and ab^2 is:	a^3b^3	ab^2 ✓	a^4b^5	a^2b
179	The LCM of $16x^2, 4x$ & $30xy$ is:	$480x^3y$	$240xy$	$240x^2y$ ✓	$120x^4y$
180	Product of LCM and HCF = --- of two polynomials.	Sum	Difference	Product ✓	Quotient
181	The square root of $x^2 - 6x + 9$ is:	$\pm(x - 3)$ ✓	$\pm(x + 3)$	$x - 3$	$x + 3$
182	The LCM of $(a - b)^2$ and $(a - b)^4$ is:	$(a - b)^2$	$(a - b)^3$	$(a - b)^4$ ✓	$(a - b)^6$
183	Factorization of $x^3 + 3x^2 + 3x + 1$ is:	$(x + 1)^3$ ✓	$(x - 1)^3$	$(x + 1)$ $(x^2 + x + 1)$	$(x - 1)$ $(x^2 - x + 1)$
184	Cubic polynomial has degree:	1	2	3 ✓	4
185	One of the factors of $x^3 - 27$ is:	$x - 3$ ✓	$x + 3$	$x^2 - 3x + 9$	Both A & C
186	An expression having degree 2 is called a ----- expression.	Linear	Quadratic ✓	Cubic	Biquadratic
187	Factorization of $x^2 + 7x - 18$ is:	$(x + 9)$ $(x - 2)$ ✓	$(x - 9)$ $(x - 2)$	$(x + 9)$ $(x + 2)$	$(x - 9)$ $(x + 2)$
188	Factorization of $t^2 - 5t - 24$ is:	$(t + 8)$ $(t - 3)$	$(t - 8)$ $(t + 3)$ ✓	$(t + 8)$ $(t + 3)$	$(t - 8)$ $(t - 3)$
189	Factorization of $6y^2 - y - 12$ is:	$(2y - 3)$ $(3y + 4)$ ✓	$(2y + 3)$ $(3y + 4)$	$(2y - 3)$ $(3y - 4)$	$(2y + 3)$ $(3y - 4)$
190	Two or more algebraic expressions refers to greatest algebraic expression which divides them without leaving a remainder is called -------.	LCM	HCF ✓	Dividend	Divisor

191	Two or more algebraic expressions is the smallest expression that is divisible by each of the given expressions is known as ----------.	LCM ✓	HCF	Dividend	Divisor
192	LCM × HCF = − − − −	$p(x) \div q(x)$	$p(x) \times q(x)$ ✓	$p(x) - q(x)$	$p(x) + q(x)$
193	Product of two polynomials = ----------	LCM × HCF ✓	LCM ÷ HCF	LCM + HCF	LCM − HCF
Ch.# 05 { Linear Equations and Inequalities }					
194	In the following, linear equation is:	$5x > 7$	$4x - 2 < 1$	$2x + 1 = 1$ ✓	$4 = 1 + 3$
195	Solution of $5x - 10 = 10$ is:	0	50	4 ✓	-4
196	If $7x + 4 < 6x + 6$, then x belongs to the interval:	$(2, \infty)$	$[2, \infty)$	$(-\infty, 2)$ ✓	$(-\infty, 2]$
197	A vertical line divides the plane into ------.	Left Half Plane	Right Half Plane	Full Plane	Two Half Planes ✓
198	The equation formed from the linear inequality is called ----.	Linear Equation	Associated Equation ✓	Quadratic Equation	None of these
199	$3x + 4 < 0$ is:	Equation	Inequality ✓	Not Inequality	Identity
200	Corner point is also called ----.	Code	Vertex ✓	Curve	Region
201	(0,0) is solution of inequality:	$4x + 5y > 8$	$3x + y > 6$	$-2x + 3y < 0$ ✓	$x + y > 4$
202	The solution region restricted to the first quadrant is called ----.	Objective Region	Feasible Region ✓	Solution Region	Constrains Region
203	A function that is to be maximized or minimized is called -----.	Solution Function	Objective Function ✓	Feasible Function	None of these
204	$ax + b = 0$ & $a \neq 0$ is also called the general form of ---- equation in one variable.	Linear ✓	Quadratic	Cubic	None
205	A linear equation in one variable has only --- solution.	Two	Three	One ✓	None of these
206	The statement involving any of the symbols $<, >, \leq$ or $\geq$ is called_____.	Equation	Identity	Inequality ✓	Linear Equation

207	The order of an inequality is changed by multiplying or dividing each side by a --- constant.	Positive	Negative ✓	Both A & B	None
208	A vertical line divides the plane into --- half planes.	Left	Right	Both A & B ✓	Upper
209	A non-vertical line divides the plane into --- half planes.	Upper	Lower	Both A & B ✓	Left
210	Solution of the inequality $x > 1$ is:	$(1, \infty)$✓	$[1, \infty)$	$(-1, \infty)$	$[-1, \infty)$
211	Solution of the inequality $x < 1$ is:	$(-\infty, -1)$	$(-\infty, 1)$ ✓	$(-1, \infty)$	$(-\infty, -1]$
212	Solution of the inequality $x \geq 1$ is:	$[-1, \infty)$	$(-1, \infty)$	$[1, \infty)$ ✓	$(1, \infty)$
213	Solution of the inequality $x \leq 1$ is:	$(-\infty, -1)$	$(-\infty, 1)$	$(-\infty, -1]$	$(-\infty, 1]$ ✓
214	A point of a solution region where two of its boundary lines intersect, is called a --- of the solution region.	Corner Point	Vertex	Both A & B ✓	None
215	The feasible solution which maximizes or minimizes the objective function is called the ----------.	Solution Function	Optimal Function ✓	Feasible Function	None
216	The point O(0,0) is in quadrant:	I	II	III or IV	None of these ✓
217	The point P(2, 0) lies on ———	$x - axis$ ✓	$y - axis$	$z - axis$	All of these
218	The graph of $x = -2$ is a _____ line.	Horizontal	Vertical ✓	Slant	None
219	$3 - y = 0$ is a _____ line.	Horizontal ✓	Vertical	Slant	None
220	$y = x$ is a line which lines on _____.	$x - axis$	$y - axis$	$z - axis$	$Origin$ ✓
221	All the points of the plane have y-coordinate, $y = 0$ f they lie on the _____.	$x - axis$ ✓	$y - axis$	$z - axis$	$Origin$
222	All the points of the plane have y-coordinate, $x = 0$ f they lie on the _____.	$x - axis$	$y - axis$ ✓	$z - axis$	$Origin$

223	The value of $\tan^{-1} 2$ in radians is:	$\frac{\pi}{2}$	$\frac{3\pi}{2}$	0.4636π	1.1071 ✓
224	In a right triangle, the hypotenuse is 13 units and one of the angles is $\theta = 30°$. The length of the opposite side is:	6.5 units ✓	7.5 units	6 units	5 units
225	A person standing 50 m away from a building sees the top of the building at an angle of elevation of 45°. Height of the building is:	50 m ✓	25 m	35 m	70 m
226	$\sec^2\theta - \tan^2\theta =$ ___	$\sin^2\theta$	1 ✓	$\cos^2\theta$	$\cot^2\theta$
227	If $\sin\theta = \frac{3}{5}$ and θ is an acute angle, $\cos^2\theta =$ ____	$\frac{7}{25}$	$\frac{24}{25}$	$\frac{16}{25}$ ✓	$\frac{4}{25}$
228	$\frac{5\pi}{24} rad =$ ___ $degrees.$	30°	37.5° ✓	45°	52.5°
229	$292.5° =$ _____ $rad.$	$\frac{17\pi}{6}$	$\frac{17\pi}{4}$	$1.6\,\pi$	$1.625\,\pi$ ✓
230	Which of the following is a valid identity?	$\cos\left(\frac{\pi}{2}-\theta\right) = \sin\theta$ ✓	$\cos\left(\frac{\pi}{2}-\theta\right) = \cos\theta$	$\cos\left(\frac{\pi}{2}-\theta\right) = \sec\theta$	$\cos\left(\frac{\pi}{2}-\theta\right) = \operatorname{cosec}\theta$
231	$\sin 60° =$ _____.	1	$\frac{1}{2}$	$\sqrt{(3)^2}$	$\frac{\sqrt{3}}{2}$ ✓
232	$\cos^2 100\pi + \sin^2 100\pi =$	1 ✓	2	3	4
233	The plane geometry is the study of ----- dimensional figures.	One	Two ✓	Three	None
234	A mathematical system that studies the properties of lines, points, shapes, and planes in flat spaces is known as -----.	Coordinate Geometry	Plane Geometry	Euclidean Geometry ✓	None of these

235	A plane figure which formed by two rays sharing a common end point is called a/an -----.	Angle ✓	Ray	Vertex	None
236	The common end point of angle is known as -----.	Vertex ✓	Angle	Line	All of these
237	The amount of rotation or measure of opening between two rays is called:	Ray	Angle ✓	Vertex	None of these
238	An angle greater than zero (0°) but less than 90° is known as ----- angle.	Acute ✓	Obtuse	Right	Reflex
239	An angle greater then 90° but less than 180° is known as ----- angle.	Acute	Obtuse ✓	Right	Reflex
240	An angle greater then 180° but less than 360° is known as ----- angle.	Acute	Obtuse	Right	Reflex ✓
241	An angle that is measures exactly 90 degrees or quarter of a circle is called ----- angle.	Right ✓	Straight	Reflex	None of these
242	An angle that is measures exactly 180 degrees is called ----- angle.	Right	Straight	Half Circle	Both B & C ✓
243	An angle that is measures exactly 360 degrees is called -----.	Full Rotation	Complete Angle	Both A & B ✓	None of these
244	The angle is said to be in standard position if its vertex at ----- of the coordinate plane & initial side along positive -----.	Origin & x-axis ✓	Origin & y-axis	Origin & z-axis	All of these
245	The angle will be positive if the terminal side is rotated ----- from the initial side.	Counter-Clockwise	Anti-Clockwise	Clockwise	Both A & B ✓
246	The angle will be negative if the terminal side is rotated ----- from the initial side.	Counter-Clockwise	Anti-Clockwise	Clockwise ✓	None
247	The angles that share the same initial side and terminal side in standard position is known as -----.	Allied Angles	Co-terminal Angles ✓	Reference Angles	All of these
248	Two angles that have a sum or difference that is either 0, 90, or a multiple of 90 is called -----.	Allied Angles ✓	Co-terminal Angles	Reference Angles	None

249	The acute angle formed between the terminal side of a given angle and the x-axis, always considered positive and less than 90 degrees is known as -----.	Allied Angles	Co-terminal Angles	Reference Angles ✓	None
250	_____ is a unit of measurement of angles. It represents $\frac{1}{360}$ of a full rotation around a point.	Degree ✓	Radian	Circular System	All of these
251	$1° =$ _____	$10'$	$60'$ ✓	$600'$	None
252	$1' =$ _____	$60''$ ✓	$10''$	$100''$	$600''$
253	$1° =$ _____	$100''$	$360''$	$3600''$ ✓	$3160''$
254	The angle subtended at the centre of a circle by an arc whose length is equal to the radius of the circle is known as _____.	Radian	Angular Measurement	Circular System	All of these ✓
255	System International (SI) unit of angle is _____.	Degree	Radian ✓	Both A & B	None
256	The concept of radian measure, was first formalized by mathematicians in the ---- century.	18^{th} ✓	19^{th}	20^{th}	21^{th}
257	Circumference (perimeter of a circle) is equal to _____.	$4\pi r$	$2\pi r$ ✓	πr^2	None of these
258	Area of a circle is equal to ___.	$4\pi r$	$2\pi r$	πr^2 ✓	None of these
259	$1\ rad \approx$ _____	$57.2958°$ ✓	$67.2958°$	$0.01745°$	$58.2958°$
260	$1° =$ _____	$0.1745\ rad$	$0.01745\ rad$ ✓	$.001745\ rad$	$57.2958\ rad$
261	$Arc\ length\ of\ sector = \ell =$ _	$r^2\theta$	$r\theta$ ✓	$\pi^2 r$	πr^2
262	Area of sector $= A =$ ___	$\pi^2 r$	πr^2	$\frac{1}{2}r^2\theta$ ✓	$\frac{1}{2}\theta^2 r$
263	$\frac{11\pi}{6}\ rad =$ _____	$300°$	$310°$	$330°$ ✓	$200°$
264	$135° =$ _____	$\frac{3\pi}{4}\ rad$ ✓	$\frac{4\pi}{3}\ rad$	$\frac{2\pi}{3}\ rad$	$\frac{3\pi}{2}\ rad$

265	Hipparchus Nicaea (c.190 -120BC) is considered the "father of _____.	Algebra	Calculus	Trigonometry ✓	None
266	_____ divided a circle into 360 degrees and used this system for measuring.	Al-Battani	Hipparchus ✓	Isaac Newton	Leibniz
267	Al-Khwarizmi (c. 780-850 CE) known for his work in _____.	Algebra ✓	Calculus	Trigonometry	None of these
268	Omar Khayyam (c. 1048-1131 CE) worked on _____.	Algebra	Calculus	Spherical Trigonometry ✓	None
269	$\frac{Perpendicular}{Hypotenuse} =$ ___	$\sin\theta$ ✓	$\cos\theta$	$\tan\theta$	$\sec\theta$
270	$\frac{Base}{Hypotenuse} =$ ___	$\cos\theta$ ✓	$\tan\theta$	$\sin\theta$	$\text{cosec}\,\theta$
271	$\frac{Perpendicular}{Base} =$ ___	$\sin\theta$	$\cos\theta$	$\sec\theta$	$\tan\theta$ ✓
272	$\frac{Hypotenuse}{Perpendicular} =$ ___	$\text{cosec}\,\theta$ ✓	$\sec\theta$	$\cot\theta$	$\cos\theta$
273	$\frac{Hypotenuse}{Base} =$ ___	$\cot\theta$	$\cos\theta$	$\text{cosec}\,\theta$	$\sec\theta$ ✓
274	$\frac{Base}{Perpendicular} =$ ___	$\sin\theta$	$\text{cosec}\,\theta$	$\sec\theta$	$\cot\theta$ ✓
275	$\text{cosec}\,\theta =$ _____	$\frac{1}{\cos\theta}$	$\frac{1}{\sin\theta}$ ✓	$\frac{1}{\tan\theta}$	None of these
276	$\sec\theta =$ _____	$\frac{1}{\sin\theta}$	$\frac{1}{\tan\theta}$	$\frac{1}{\cos\theta}$ ✓	All of these
277	$\cot\theta =$ _____	$\frac{1}{\cos\theta}$	$\frac{1}{\sin\theta}$	$\frac{1}{\tan\theta}$ ✓	None of these
278	$\sin(90° - \theta) =$ ____	$\sin\theta$	$\cos\theta$ ✓	$\tan\theta$	$\text{cosec}\,\theta$
279	$\cos(90° - \theta) =$ ____	$\cot\theta$	$\sec\theta$	$\sin\theta$ ✓	$\tan\theta$
280	$\tan(90° - \theta) =$ ____	$\sec\theta$	$\sin\theta$	$\text{cosec}\,\theta$	$\cot\theta$ ✓
281	$\cot(90° - \theta) =$ ____	$\sin\theta$	$\cos\theta$	$\tan\theta$ ✓	$\text{cosec}\,\theta$
282	$\sec(90° - \theta) =$ ____	$\sec\theta$	$\sin\theta$	$\text{cosec}\,\theta$ ✓	$\cot\theta$

283	$\text{cosec}(90° - \theta) =$ ____	$\cot\theta$	$\sec\theta$ ✓	$\sin\theta$	$\tan\theta$
284	$\sin^2\theta + \cos^2\theta =$ ___	1 ✓	2	3	4
285	$\tan^2\theta + 1 =$ ____	$\sec^3\theta$	$\sec^2\theta$ ✓	$\text{cosec}^3\theta$	$\text{cosec}^2\theta$
286	$1 + \cot^2\theta =$ _____	$\text{cosec}^3\theta$	$\text{cosec}^2\theta$ ✓	$\sec^2\theta$	$\tan^2\theta$
287	$\tan\theta + \cot\theta =$ _____	$\sec\theta\,\text{cosec}\,\theta$ ✓	$\text{cosec}\,\theta\cos\theta$	$\sec\theta\sin\theta$	None
288	"The square of the length of the hypotenuse of a ____ triangle is equal to the sum of the squares of the lengths of the other two sides" is known as Pythagoras theorem.	Acute	Obtuse	Right ✓	All of these
289	$45° =$ ____	$\frac{\pi}{4}\,rad$ ✓	$\frac{\pi}{3}\,rad$	$\frac{\pi}{6}\,rad$	$\frac{\pi}{2}\,rad$
290	$\sin(0) =$ ___	0 ✓	1	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$
291	$\cos(0) =$ ____	0	1 ✓	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$
292	$\tan(90) =$ ____	0	1	$\frac{1}{2}$	∞ ✓
Ch.# 07 { Coordinate Geometry }					
293	The equation of a straight line in the slope-intercept form is written as:	$y = m(x + c)$	$y - y_1 = m(x - x_1)$	$y = c + mx$ ✓	$ax + by + c = 0$
294	The gradients of two parallel lines are:	Equal ✓	Zero	Negative reciprocals of each other	Always undefined
295	If the product of the gradients of two lines is -1, then the lines are:	Parallel	Perpendicular ✓	Collinear	Coincident
296	Distance between two points $P(1, 2)$ and $Q(4, 6)$ is:	5 ✓	6	$\sqrt{13}$	4
297	The midpoint of a line segment with endpoints $(-2,\ 4)$ and $(6, -2)$ is:	$(4, 2)$	$(2, 1)$ ✓	$(1, 1)$	$(0, 0)$

298	A line passing through points $(1, 2)$ and $(4, 5)$ is:	$y = x + 1$ ✓	$y = 2x + 3$	$y = 3x - 2$	$y = x + 2$
299	The equation of a line in point-slope form is:	$y = m(x + c)$	$y - y_1 = m(x - x_1)$ ✓	$y = c + mx$	$ax + by + c = 0$
300	$2x + 3y - 6 = 0$ in the slope-intercept form is:	$y = \frac{-2}{3}x + 2$ ✓	$y = \frac{2}{3}x - 2$	$y = \frac{2}{3}x + 1$	$y = \frac{-2}{3}x - 2$
301	The equation of a line in symmetric form is:	$\frac{x}{a} + \frac{y}{b} = 1$	$\frac{x - x_1}{1} + \frac{y - y_1}{m} = \frac{z - z_1}{1}$	$ax + by + c = 0$ ✓	$y - y_1 = m(x - x_1)$
302	The equation of a line in normal form is:	$y = mx + c$	$\frac{x}{a} + \frac{y}{b} = 1$	$\frac{x - x_1}{\cos\alpha} + \frac{y - y_1}{\sin\alpha}$	$x\cos\alpha + y\sin\alpha = p$ ✓
303	A French philosopher and mathematician _____ introduced algebra method in geometry which gave birth to analytic geometry (or coordinate geometry).	Hipparchus	Isaac Newton	Leibniz	Rene Descartes ✓
304	The study of geometrical shapes in a plane is called----	Plane Geometry	Coordinate Geometry	Analytic Geometry	All of these ✓
305	The horizontal line $x'Ox$ is called _____.	$x - axis$ ✓	$y - axis$	$z - axis$	$Origin$
306	The vertical line $y'Oy$ is called _____.	$x - axis$	$y - axis$ ✓	$z - axis$	$Origin$
307	The point of intersection of $x - axis$ and $y - axis$ is called _____.	$x - axis$	$y - axis$	$z - axis$	$Origin$ ✓
308	The two intersection lines are called _____.	$x - axis$	$y - axis$	$z - axis$	$Coordinate$ Axes ✓
309	The point of intersection of coordinate axes is called ____.	$x - axis$	$y - axis$	$Origin$ ✓	$z - axis$
310	The first component of the ordered pair (x, y) is called _____.	x-coordinate	Abscissa	Ordinate	Both A & B ✓
311	The second component of the ordered pair (x, y) is called _____.	y-coordinate	Ordinate	Both A & B ✓	None

312	The set of points which lie on the same line are called ____ points.	Collinear ✓	Non-collinear	Both A & B	None of these
313	The set of points which are not lie on the same line are called ____ points.	Collinear	Non-collinear ✓	Both A & B	None of these
314	Cartesian plane is divided into _____ quadrants.	One	Two	Three	Four ✓
315	_____ is the only point collinear with the points of the both axes separately.	$(0,1)$	$(1,0)$	$(1,1)$	$(0,0)$ ✓
316	In a triangle there can be only _____ right angle.	1 ✓	2	3	4
317	Two parallel lines intersect at _____ point / points.	One	Two	Three	No point ✓
318	The points P, Q and R are collinear if $\|PR\| =$_____.	$\|PQ\| - \|QR\|$	$\|PQ\| + \|QR\|$ ✓	$\|PQ\| \times \|QR\|$	$\|PQ\| \div \|QR\|$
319	If $P(x_1, y_1)$ and $Q(x_2, y_2)$ are two points in the plane, then the mid-point $M(x, y)$ of the line segment PQ is $M(x, y) =$ _____.	$M\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$ ✓	$M\left(\frac{x_1-x_2}{2}, \frac{y_1+y_2}{2}\right)$	$M\left(\frac{x_1+x_2}{2}, \frac{y_1-y_2}{2}\right)$	$M\left(\frac{x_1-x_2}{2}, \frac{y_1-y_2}{2}\right)$
320	In the triangle ABC the non-collinear points A,B, and C are the three _____ of the triangle ABC.	Sides	Angles	Vertices ✓	All of these
321	A/an _____ triangle PQR is a triangle which has two of its sides with equal length while the third side has a different length.	Isosceles ✓	Scalene	Equilateral	Right
322	A triangle in which one of the angles has measure equal to 90° is called a ____ triangle.	Isosceles	Scalene	Equilateral	Right ✓
323	A line segment has ____ end points.	1	2 ✓	3	4
324	A _____ midpoint of any two points in the plane.	2	3	4	Unique ✓
325	The four-sided figures are:	Square	Rectangle	Parallelogram	All of these ✓

326	The method (x, y) of pairing of in a one-to-one fashion the points with ordered pairs of real numbers is called _____.	Two Dimensional Rectangular	Cartesian	Coordinate System	All of these ✓
327	All points (x, y) with $x > 0, y > 0$ ___ quadrant.	I ✓	II	III	IV
328	All points (x, y) with $x < 0, y > 0$___ quadrant.	I	II ✓	III	IV
329	All points (x, y) with $x < 0, y < 0$___ quadrant.	I	II	III ✓	IV
330	All points (x, y) with $x > 0, y < 0$___ quadrant.	I	II	III	IV ✓
331	The angle α $(0° < \alpha < 180°)$ measured counterclockwise from positive x-axis to a non-horizontal straight line ℓ is called the _____ of ℓ.	Inclination ✓	Midpoint	Symmetric form	Normal form
332	The points on the x-axis are the form _____.	$(a, 0)$ ✓	$(0, b)$	(a, b)	$(0, 0)$
333	The points on the y-axis are the form _____.	$(a, 0)$	$(0, b)$ ✓	(a, b)	$(0, 0)$
334	The distance always taken to be _____.	Positive	Negative	Non-negative	Both A & C ✓
335	The measure of steepness (ratio of rise to the run) is termed as _____.	Slope	Gradient	Both A & B ✓	None
336	In analytical geometry, **slope or gradient m** of a non-vertical straight line with as its inclination is defined by:	$m = \sin\alpha$	$m = \tan\alpha$ ✓	$m = \cos\alpha$	$m = \sec\alpha$
337	If ℓ is horizontal then its slope is _____	Zero ✓	Undefined	One	None
338	If ℓ is vertical then its slope is _____	Zero	Undefined ✓	One	None
339	If $0° < \alpha < 90°$ then m (slope) is _____	Positive ✓	Negative	Both A & B	None of these
340	If $90° < \alpha < 180°$ then m (slope) is _____	Positive	Negative ✓	Non-negative	None of these

341	$m = \tan\alpha = \frac{y_2 - y_1}{x_2 - x_1}$	Slope-Intercept Form	Symmetric Form	Two-Point Form ✓	Point-Slope Form
342	$x\cos\alpha + y\sin\alpha = p$	Symmetric Form	Two-Point Form	Point-Slope Form	Normal Form ✓
343	If $a > 0$, then the line ℓ is ____ the x- $axis$.	Above ✓	Below	Becomes	All of these
344	If $a < 0$, then the line ℓ is ____ the x- $axis$.	Above	Below ✓	Becomes	All of these
345	If $a = 0$, then the line ℓ ____ the x- $axis$.	Above	Below	Becomes ✓	All of these
346	Equation of x- $axis$ is _____	$x = 0$	$y = 0$ ✓	$z = 0$	Both A & B
347	Equation of y- $axis$ is _____	$x = 0$ ✓	$y = 0$	$z = 0$	Both A & B
348	_____stands for "parallel.	$\parallel$ ✓	$\nparallel$	$\perp$	None
349	_____stands for "not parallel"	$\parallel$	$\nparallel$ ✓	$\perp$	None
350	___stands for "perpendicular"	$\parallel$	$\nparallel$	$\perp$ ✓	None
351	$\begin{vmatrix} x & y & 1 \\ x_1 & y_1 & 1 \\ x_2 & y_2 & 1 \end{vmatrix} = 0$ then points will be -----	Collinear ✓	Not Collinear	Perpendicular	Not Perpendicular
			Ch.# 08 (Logic)		
352	Which of the following expressions is often related to inductive reasoning?	Based on repeated experiments ✓	If and only if statements	Statements is proven by a theorem	Based on general principles
353	Which of the following sentences describe deductive reasoning?	General conclusions from a limited number of observations	Based on repeated experiments	Based on units of information that are accurate	Draw conclusion from well-known facts ✓
354	Which one of the following statements is true?	The set of integers is finite	The sum of the interior angles of any quadrilateral is always 180°	$\frac{22}{7} \notin Q'$ ✓	All isosceles triangles are equilateral triangles
355	Which of the following statements is the best to represent the negation of the statements "The stove is burning"?	The stove is not burning ✓	The stove is dim	The stove is turned to low heat	It is both burning and not burning

356	The conjunction of two statements p and q is true when:	Both p and q are false	Both p and q are true ✓	Only q is true	Only p is true
357	A conditional is regarded as false only when:	Antecedent is true and consequent is false ✓	Consequent is true and antecedent is false	Antecedent is true only	Consequent is false only
358	Contrapositive of $q \rightarrow p$ is	$q \rightarrow \sim p$	$\sim q \rightarrow p$	$\sim p \rightarrow \sim q$ ✓	$\sim q \rightarrow \sim p$
359	The statement "Every integer greater than 2 is a sum of two prime numbers" is:	Theorem	Conjecture ✓	Axiom	Logic
360	The statement " A straight line can be drawn between any two points" is:	Theorem	Conjecture	Axiom ✓	Logic
361	The statement " The sum of the interior angle of a triangle is 180°" is:	Converse	Theorem ✓	Axiom	Conditional
362	The father of formal logic is _____.	Peter Abelard	George Boole	Bertrand Russell	Aristotle ✓ ✓
363	Who developed Boolean algebra?	Peter Abelard	George Boole ✓	Bertrand Russell	Aristotle
364	Who formalized modern predicate logic?	Peter Abelard	George Boole	Gottlob Frege ✓	Aristotle
365	A sentence or mathematical expression which may be true or false but not both is called a _____.	Statement ✓	Negation	Theorem	Axiom
366	$\frac{22}{7} \in$ _____	N	Z	Q ✓	Q'
367	The set of integers is _____.	Finite	Infinite ✓	Both A & B	None
368	The circumference of a circle with radius r is:	πr^2	$r\pi^2$	$2\pi r$ ✓	$4\pi r$
369	The area of a circle with radius r is:	πr^2 ✓	$r\pi^2$	$2\pi r$	$4\pi r$
370	_____ Logical operator is used for "Not".	$\wedge$	$\vee$	$\rightarrow$	$\sim$ ✓
371	_____ Logical operator is used for "And".	$\rightarrow$	$\vee$	$\wedge$ ✓	$\sim$
372	_____ Logical operator is used for "Or".	$\vee$ ✓	$\sim$	$\rightarrow$	$\leftrightarrow$

373	_____ Logical operator is used for "implies".	$\leftrightarrow$	$\rightarrow$ ✓	$\simeq$	$\sim$
374	_____ Logical operator is used for "Is equivalent to".	$\wedge$	$\vee$	$\leftrightarrow$ ✓	$\sim$
375	If p is any statement, its negation is denoted by ___.	$\sim p$ ✓	$\simeq p$	$\wedge p$	$\vee p$
376	The conjunction of two statements p and q symbolically written as ___.	$p \sim q$	$p \wedge q$ ✓	$p \vee q$	All of these
377	A conjunction is considered to be true only if both statements are _____.	True ✓	False	Both A & B	None
378	The disjunction of p and q symbolically written as ___.	$p \sim q$	$p \wedge q$	$p \vee q$ ✓	All of these
379	The disjunction $p \vee q$ is considered to be true when at least one of the statements is _____.	True ✓	False	Both A & B	None
380	A compound statement of the form if p then q $(p \rightarrow q)$ is called_____.	Conditional	Implication	Both A & B ✓	None
381	In $p \rightarrow q$, p is called ____	Antecedent	Hypothesis	Both A & B ✓	None
382	In $p \rightarrow q$, q is called ____	Consequent	Conclusion	Both A & B ✓	None
383	The statement $p \rightarrow q \wedge q \rightarrow p$ is shortly written as $p \leftrightarrow q$ and is called _____.	Biconditional	Equivalence	Both A & B ✓	None
384	$q \rightarrow p$ is called the ____ of $p \rightarrow q$;	Converse ✓	Inverse	Contrapositive	All of these
385	$\sim p \rightarrow \sim q$ is called the _____ of $p \rightarrow q$;	Converse	Inverse ✓	Contrapositive	None
386	$\sim q \rightarrow \sim p$ is called the _____ of $p \rightarrow q$;	Converse	Inverse	Contrapositive ✓	All of these
387	_____ is a mathematical statement that has been proved true on previously known facts.	Theorem ✓	Statement	Axiom	All of these

388	_____ is a mathematical statement or hypothesis that is believed to be true based on observations but has not yet been proved.	Theorem	Conjecture ✓	Axiom	All of these
389	_____ is a mathematical statement that we believe to be true without any evidence or requiring any proof.	Theorem	Statement	Axiom ✓	All of these
	Ch.# 09 { Similar Figures }				
390	If two polygons are similar, then:	Their corresponding angles are equal ✓	Their areas are equal	Their volumes are equal	Their corresponding sides are equal
391	The ratio of the areas of two similar polygons is:	Equal to the ratio of their perimeters	Equal to the square of the ratio of their corresponding sides ✓	Equal to the cube of the ratio of their corresponding sides	Equal to the sum of their corresponding sides
392	If the volume of two similar solids is $125cm^3$ and $27cm^3$, the ratio of their corresponding heights is ___	3:5	5:3 ✓	25:9	9:25
393	The exterior angle of regular pentagon is;	40°	45°	60°	72° ✓
394	A parallelogram has an area of 64 cm^2 and a similar parallelogram has an area 144 cm^2. If a side of the smaller parallelogram is 8 cm, the corresponding side of the larger parallelogram is:	10 cm	12 cm	✓ 18 cm	16 cm
395	The total number of diagonals in a polygon with 9 sides is:	18	21	25	27 ✓
396	Two spheres are similar, and their radii are in the ratio 4:5. If the surface area of the larger sphere is $500\pi\ cm^2$, what is the surface area of the smaller sphere?	$256\pi\ cm^2$	$320\pi\ cm^2$	✓ $400\pi\ cm^2$	$405\pi\ cm^2$

397	A regular polygon has an exterior angle of 30°. How many diagonals does the polygon have?	✓ 54	90	72	108
398	In a regular hexagon, the ratio of the length of a diagonal to the side length is:	$\sqrt{3}:1$	2 : 1 ✓	3 : 2	2 : 3
399	A regular polygon has an interior angle of 165°. How many sides does it have?	15	16	20	24 ✓
400	Euclid developed the fundamental principles of _____.	✓ Geometry	Algebra	Functions	None
401	Three or more than three-sided closed figure is called _____.	Triangle	Square	Pentagon	Polygon ✓
402	Two polygons are ____ if their corresponding angles are equal and the corresponding sides are proportionally equal.	Congruent	Concurrent	Similar ✓	None
403	If two angles in one triangle are congruent to corresponding angles in another triangle, the third angle in each triangle must be _____.	Congruent ✓	Concurrent	Both A & B	None of these
404	____ Symbol used for congruent.	≈	≅ ✓	~	≡
405	____ Symbol used for approximately.	≈✓	≅	~	≡
406	____ Symbol used for similarity.	≈	≅	~ ✓	≡
407	Proportionality of sides one side is ____ times of its corresponding side.	**2**	**3**	**4**	***k*** ✓
408	*Area of ∥ gram* = ___	*length* × *width*	*base* × *altitude* ✓	$\frac{1}{2}$(*base* × *altitude*)	$(side)^2$
409	*Area of triangle* = ___	*length* × *width*	*base* × *altitude*	$\frac{1}{2}$(*base* × *altitude*) ✓	$(side)^2$
410	*Area of rectangle* = ___	*length* × *width* ✓	*base* × *altitude*	$\frac{1}{2}$(*base* × *altitude*)	$(side)^2$
411	*Area of square* = ___	*length* × *width*	*base* × *altitude*	$\frac{1}{2}$(*base* × *altitude*)	$(side)^2$ ✓

412	The exterior angle of each side of a regular n-sided polygon is:	$\frac{360°}{n}$ ✔	$\frac{180°}{n}$	$(n-1) \times 360°$	$(n-2) \times 360°$
413	The sum of interior angle of an n-sided polygon is _____.	$(n-1) \times 180°$	$(n-2) \times 180°$ ✓	$(n-1) \times 360°$	$(n-2) \times 360°$
414	The sum of the interior angles of any quadrilateral is always _____.	180°	100°	360° ✓	270°
415	The sum of exterior angle of an n-sided polygon is _	180°	360° ✓	100°	270°
416	The interior and exterior angles are ___ at a vertex.	Complementary	360°	Supplementary ✓	None
417	interior + exterior angle = _____	180° ✓	100°	90°	270°
418	$\frac{A_1}{A_2} =$ ____	$\frac{\ell_1}{\ell_2}$	$\left(\frac{\ell_1}{\ell_2}\right)^2$ ✓	$\frac{\ell_2}{\ell_1}$	$\left(\frac{\ell_2}{\ell_1}\right)^2$
419	$\frac{V_1}{V_2} =$ ____	$\frac{r_1}{r_2}$	$\left(\frac{h_1}{h_2}\right)^3$	$\left(\frac{r_1}{r_2}\right)^3$	Both B & C ✓
420	A polygon with three sides and three angles is called:	Triangle ✓	Rectangle	Hexagon	All of these
421	The sum of the measures of the interior angles of a triangle is _____.	180° ✓	100°	360°	270°
422	A triangle have all sides are equal and each angle is 60° is called _____.	Isosceles △	Equilateral △ ✓	Scalene △	None
423	A triangle with two equal sides and the angles opposite to the equal sides also equal is called _____.	Isosceles △ ✓	Equilateral △	Scalene △	None
424	A triangle which has all different sides is called __.	Isosceles △	Equilateral △	Scalene △ ✓	None
425	A triangle which has all acute angles is called ____	Acute △ ✓	Obtuse △	Right △	All of these
426	A triangle which has obtuse angle is called ___	Acute △	Obtuse △ ✓	Right △	All of these

427	A triangle with right (90°) angle is known as _____	Acute △	Obtuse △	Right △ ✓	All of these
428	The measure of an exterior angle in triangle is equal to the sum of the measures of _____ opposite interior angles.	1	✓ 2	3	None
429	_____ is quadrilaterals whose opposite sides is parallel and equal in length and opposite angles are equal. Its adjacent angles are supplementary and its diagonals are bisecting each other and its diagonals are not in equal in length.	∥ $gram$ ✓	Trapezium	Kite	All of these
430	Number of diagonal of n-sided polygon is equal to:	$\frac{n(n-1)}{2}$	$\frac{n(n-2)}{2}$	$\frac{n(n-3)}{2}$ ✓	$\frac{n(n-3m)}{2}$
431	A diagonal is a line connecting _____ non-adjacent vertices.	✓ 2	3	4	5
432	Which of the following polygon has no any diagonal?	✓ Triangle	Square	Pentagon	Hexagon
433	A 4-sided polygon (quadrilateral) has _____ diagonals.	✓ 2	3	4	None
434	A 5-sided polygon (pentagon) has _____ diagonals.	2	3	4	✓ 5
Ch.# 10 { Graphs of Functions }					
435	$x = 5$ represents:	$x - axis$	$y - axis$	$line \parallel x - axis$	$line \parallel y - axis$ ✓
436	Slope of the line $y = 5x + 3$ is:	3	-3	5 ✓	-5
437	The $y - intercept$of $y = -2x - 1$ is:	-2	2	-1 ✓	1

438	The graph of $y = x^3$, cuts the $x - axis$ at:	$x = 0$ ✓	$x = 1$	$x = -1$	$x = 2$
439	The graph of 3^x represents:	Growth ✓	Decay	Both A & B	A line
440	The graph of $y = -x^2 + 5$ opens:	Upward	Download ✓	Left side	Right side
441	The graph of $y = x^2 - 9$ opens:	Upward ✓	Download	Left side	Right side
442	$y = 5^x$ is _____ function.	Linear	Quadratic	Cubic	Exponential ✓
443	Reciprocal function is:	$y = 7^x$	$y = \frac{2}{x}$ ✓	$y = 2x^2$	$y = 5x^2$
444	$y = -3x^3 + 7$ is __ function.	Exponential	Cubic ✓	Linear	Reciprocal
445	The graph of $x = -y^2 + 5$ opens:	Upward	Download	Left side ✓	Right side
446	The graph of $x = y^2 - 9$ opens:	Upward	Download	Left side	Right side ✓
447	The graph of 3^{-x} represents:	Growth	Decay ✓	Both A & B	A line
448	A linear function is a mathematical expression that represents a ____ relation between two variables.	Straight line ✓	parabola	S-shaped	All of these
449	A quadratic function is a type of polynomial function that involves ___ term.	x	✓ x^2	x^3	$\frac{a}{x}$
450	The general form of quadratic function is ___	✓ $y = ax^2 + bx + c, a \neq 0$	$y = ax^2 + c, a \neq 0$	$y = ax + c, a \neq 0$	None
451	The graph of a quadratic function is always a ____.	Straight line	Parabola ✓	S-shaped	None of these
452	A cubic function is a type of polynomial function of degree ____	**1**	**2**	✓ **3**	**4**

453	The graph of a cubic function is always a _____.	Straight line	Parabola	S-shaped ✓	None of these
454	The general form of cubic function is ___	✓ $y = ax^3 + bx^2 + cx + d$, $a \neq 0$	$y = ax^3 + bx^2 + c$, $a \neq 0$	$y = ax^3 + bx + d$, $a \neq 0$	None of these
455	The graph of a cubic function is a curve that can have at most _____ turning points.	**1**	✓ **2**	**3**	**4**
456	A reciprocal function is a function of the form:	x	x^2	x^3	✓ $\frac{a}{x}$ $x \neq 0$
457	An asymptote is a line that a graph approaches but _____ touches.	Single point	Two points	✓ Never	None
458	A tangent is a line that just touches a curve only at _____ point/points (and doesn't cross it).	✓ **1**	**2**	**3**	**4**
	Ch.# 11 { Loci and Construction }				
459	A triangle can be constructed if the sum of the measure of any two sides is _____ the measure of the third side.	Less than	✓ Greater than	Equal to	Greater than and equal to
460	An equilateral triangle _____.	Can be isosceles ✓	Can be right angled	Can be obtuse angled	Has each angle equal to 50°
461	If the sum of the measures of two angles is less than 90°, then the triangle is _____.	Equilateral	Acute angled	✓ Obtuse angle	Right angled
462	The line segment joining the midpoint of a side to its opposite vertex in a triangle is called _____.	✓ Median	Perpendicular bisector	Angle bisector	Circle
463	The angle bisectors of a triangle intersect at ___.	✓ One point	Two points	Three points	Four points
464	Locus of all points equidistant from a fixed point is _____.	✓ Circle	Perpendicular bisector	Angle bisector	Parallel lines
465	Locus of points equidistant from two fixed points is ___.	Circle	Perpendicular bisector ✓	Angle bisector	Parallel lines

466	Locus of points equidistant from a fixed line is/are ___.	Circle	Perpendicular bisector	Angle bisector	✓ Parallel lines
467	Locus of points equidistant from two intersecting lines is _____.	Circle	Perpendicular bisector	✓ Angle bisector	Parallel lines
468	The set of all points which is farther than 2 km from a fixed point B is a region outside a circle of radius _____ and centre at B.	1 km	1.9 km	✓ 2 km	2.1 km
469	An equilateral triangle is a ____ triangle.	Acute ✓	Obtuse	Right	All of these
470	A right angled triangle cannot be _____.	Isosceles	Equilateral ✓	Scalene	All of these
471	The sum of the measure of any two sides of a triangle is always _____ than the measure of the third side. (Triangle Inequality Theorem)	Less	✓ Greater	Equal	None of these
472	The difference of the measure of any two sides of a triangle is always _____ than the measure of the third side.	✓ Less	Greater	Equal	None of these
473	The **Ambiguous Case** (SSA) occurs when we are given two sides and the angle opposite one of these is less than ____.	60°	✓ 90°	120°	45°
474	A perpendicular bisector is a line that intersects a line segment at right angle and dividing it into ____ equal parts.	✓ Two	Three	Four	Five
475	A line drawn from a vertex of a triangle which is perpendicular to its opposite side is called a/an _____ of a triangle.	Median	Altitude	Height	✓ Both B & C
476	Three or more than three lines are said to be concurrent, if they all pass through the __point/points	One ✓	Two	Three	More than three

477	The common point of concurrent lines is called:	Point of inflection	Point of concurrency ✓	Point of locus	None of these
478	The internal bisector of the angles of a triangle meet at a point called the _____ of the triangle.	Centroid	Orthocenter	✓ Incentre	Circumcentre
479	The point of concurrency of the three perpendicular bisector of the sides of a triangle is called _____ of a triangle.	Centroid	Orthocenter	Incentre	✓ Circumcentre
480	The point of concurrency of the three altitudes of a triangle is called _____ of a triangle.	Centroid	✓ Orthocenter	Incentre	Circumcentre
481	The point where the three medians of a triangle meet is called _____ of the triangle.	✓ Centroid	Orthocenter	Incentre	Circumcentre
482	The point of concurrency of the right bisector of the three sides of the triangle is _____ from its vertex.	✓ Equidistant	Different distance	Both A & B	None
483	Two or more triangles are said to be similar if they are equiangular and measures of their corresponding sides are _____.	Equal	✓ Proportional	Same	None
484	The altitudes of a right triangle are concurrent at the _____ of the right angle.	Vertex ✓	Base	Perpendicular	Hypotenuse
485	The right bisector of the three sides of a triangle are _____	Congruent	Collinear	✓ Concurrent	Parallel
486	The _____ altitudes of an isosceles triangle are congruent.	✓ Two	Three	Four	None
487	A point equidistant from the end points of a line-segment is on its _____	Bisector	Right-bisector ✓	Perpendicular	Median
488	The median of a triangle cut each other in the ratio _____.	4 : 1	3 : 1	2 : 1 ✓	1 : 1

516	Arithmetic mean is denoted by _____	$\bar{\bar{X}}$	$\bar{X}$ ✓	$\tilde{X}$	$\hat{X}$
517	Median is denoted by ___	$\bar{\bar{X}}$	$\bar{X}$	$\tilde{X}$ ✓	$\hat{X}$
518	Mode is denoted by ___	$\bar{\bar{X}}$	$\bar{X}$	$\tilde{X}$	$\hat{X}$ ✓
519	A grouped frequency table is also called _____	Data	Frequency distribution ✓	Frequency polygon	None
520	A histogram is set of adjacent _____	Square	Rectangle ✓	Circles	Triangles
521	A frequency polygon is many sided ____	Closed figure ✓	Square	Rectangle	Pentagon
522	A cumulative frequency table is also called ____	Frequency distribution	Data	Less than cumulative frequency distribution ✓	None
523	In a cumulative frequency polygon frequencies are plotted against _____	Midpoint	Upper class boundaries ✓	Class limits	Class intervals
524	Arithmetic mean is a measure that determines a value of the variable under study by dividing the sum of all values of the variable by their _____	Number ✓	Group	Denominator	All of these
525	A deviation is defined as a difference of any value of the variable from a ____	✓ Constant	Histogram	Sum	None
526	A data in the form of frequency distribution is called _____	Grouped data ✓	Ungrouped data	Histogram	None
527	Mean of a variable with similar observations say constant k is _____	Negative	✓ K itself	Zero	One
528	Mean is affected by change in _____	Value	Ratio	Origin ✓	All of these

529	Mean is affected by change in _____	Place	Scale ✓	Rate	Value
530	Sum of the deviations of the variable X from its mean is always _____	✓ Zero	One	Same	Two
531	A data can has ___ mode.	One	Two	Three	More than one ✓
532	The most occurring observation is called ____	Mean	Median	Mode ✓	None
533	The middle most observation of arranged data is known as _____	Mean	Median ✓	Mode	None
	Ch.# 13 { Probability }				
534	Each element of the sample space is called:	Event	Experiment	Sample point ✓	Outcomes
535	An outcome which represents how many times we expect the things to be happened is called:	Outcomes	✓ Favorable outcome	Sample space	Sample point
536	Which one tells us how often a specific event occurs relative to the total number of frequency event or trials?	Expected frequency	Sum of relative frequency	Relative frequency ✓	Frequency
537	Estimated probability of an event occurring is also known as:	Relative frequency ✓	Expected frequency	Class boundaries	Sum of expected frequency
538	The sum of all expected frequencies is equal to the fixed number of:	Trials ✓	Relative frequencies	Outcomes	Events
539	The chance of occurrence of a particular event is called:	Sample space	Estimated probability	Probability ✓	Expected frequency
540	An event which will probably occur. It has greater chance to occur is called:	Equally likely event	Likely event ✓	Unlikely event	Certain event
541	Find out the total number of possible sample space when 4 dice are rolled:	6^2	6^3	✓ 6^4	6^6
542	While rolling a pair of dice, what will be the probability of double 2?	$\frac{1}{6}$	$\frac{1}{3}$	$\frac{5}{6}$	✓ $\frac{1}{36}$

543	A card is chosen from a pack of 52 playing cards, find the probability of getting no jack and king:	$\frac{2}{13}$	✓ $\frac{11}{13}$	$\frac{2}{52}$	$\frac{11}{52}$
544	Who is the father of probability?	Georg Cantor	Ronald Fisher	Rene Descartes	Girolamo Cardano ✓
545	The word "probability" is derived from the ____ word "Probabilitas". It means "probity".	Greek	Latin ✓	Persian	French
546	The process which generates results e.g. tossing a coin, rolling a dice etc. is called a/an ___	Sample point	Event	Experiment ✓	Sample space
547	The set of all possible outcomes of an experiment is called _____	Sample point	Event	Experiment	✓ Sample space
548	The set of results of an experiment is known as __	Sample point	Event ✓	Experiment	Sample space
549	The probability of sure event (Certain event) is __	0	0.5	0.1	1 ✓
550	The probability of impossible event is ____	0 ✓	0.5	0.1	1
551	An event which will probably occur and it has greater chance to occur is called _____	Unlikely event	Equally likely event	✓ Likely event	Certain event
552	An event which will not probably occur and it has less chance to occur is known as _____	Unlikely Event ✓	Equally likely event	Likely event	Certain event
553	The events which have equal chance of occurrence is called ___	Unlikely event	✓ Equally likely event	Likely event	Certain event
554	The probability of sure event is called _____	Unlikely event	Equally likely event	Likely event	✓ Certain event
555	The range of probability for an event is:	$0 \leq P(x) \leq 1$ ✓	$1 \leq P(x) \leq 2$	$0 \leq P(x) \leq 2$	$0 \leq P(x) \leq 10$
556	The sum of the probability of an event "A" and the probability of an event not occurring " A′ " is always _____ OR $P(A) + P(A') =$ ___	0	0.25	0.5	✓ 1

557	The sum of all the relative frequencies is always equal to or approximately equal to _____	0	0.75	0.5	✓ 1
558	_____ is an estimated probability of an event occurring when an experiment is repeated a fixed number of times.	Expected frequency	Sum of relative frequency	Relative frequency ✓	Frequency
559	$P(A') =$ ___	$1 - P(A)$ ✓	$0.5 - P(A)$	$0.25 - P(A)$	$0.75 - P(A)$
560	$P(A) =$ ___	$\frac{n(A)}{n(A')}$	✓ $\frac{n(A)}{n(S)}$	Both A & B	None