

Math Marathon Questions 2022-23 (2079)

Class-10

1. What is the name of quadrilateral having opposite sides equal? (Parallelogram)
2. What is the name of quadrilateral having opposite sides parallel? (Parallelogram)
3. What is the name of quadrilateral having all the angles equal? (Rectangle)
4. What is the name of quadrilateral having all the sides equal? (rhombus)
5. What is the name of quadrilateral having all the sides and diagonals equal? (square)
6. What is the name of quadrilateral having diagonals as well as the opposite sides equal? (rectangle)
7. What is the name of quadrilateral having a right angle as well as the opposite sides parallel? (rectangle)
8. What is the name of quadrilateral having all the sides equal as well as an angle equal to a right angle? (square)
9. What is the name of quadrilateral having a reflex angle? (Concave quadrilateral)
10. What is the name of quadrilateral having all the angles less than two right angles? (Convex quadrilateral)
11. What is the name of quadrilateral having a pair of opposite sides parallel? (trapezium)
12. What is the name of quadrilateral having one of the diagonals bisecting other diagonal at right angle? (kite)
13. What is the name of quadrilateral in which the diagonals bisect each other? (Parallelogram)
14. What is the name of quadrilateral in which the diagonals bisect each other at right angles? (square)
15. What is the single value of $25^2 - 15^2$? (400)
16. How many times can $a-b$ be subtracted from $a^2 - b^2$? $(a+b)$ times
17. How many halves are there in $50\frac{1}{2}$? (101)
18. I am the 3 digits square number that can be read from left or right gives the same. Who am I? (121)
19. How many three quarters are there in 9? (12)
20. What are the 3 consecutive prime numbers which have a difference of 2? (3,5,7)
21. What is the next in the sequence 61, 52, 63, 94, 46? (18)
22. I am two digits number. The mathematicians like me because I am perfect square and cube number. Who am I? (64)
23. If $a+b=3$, $b+c=4$ and $c+a=5$, then $a+b+c$? (6)
24. How much is $500 \div 0.5$? (1000)
25. What is the area of right angled triangle whose sides are 3cm, 4cm and 5cm? (6 sq.cm)
26. What is the point of intersection of the perpendicular bisectors of the side of a triangle called? (circumcentre)
27. What is the point of intersection of the perpendiculars of the sides of a triangle drawn from the vertices to the opposite sides called? (Orthocenter)
28. What is the point of intersection of the angular bisectors of a triangle called? (in-centre)
29. The point of intersection of the medians of a triangle is called? (Centroid)
30. What is 20% of Rs 2000? (Rs 400)
31. In $(AH)^2 = AHH$, what is the digits letter stands for? (A=1, H=0)
32. What is the size of the exterior angle of a regular hexagon? (60°)
33. A student created a new method of multiplication in which $3 \times 4 = 19$, $5 \times 6 = 41$ then what is for $6 \times 7 =$? (55)
34. What are the next two numbers in this sequence 1, 3, 7, 15? (31,63)
35. If $2@3=35$, $3@4=91$ then what is for $3@3$? (54)
36. How many times 4^2 appears in the expression $\sqrt{4^2 + 4^2 + 4^2 + \dots + 4^2} = 4^2$ (16 times)
37. How many edges does a cuboid have altogether? (12)
38. The boiling point and freezing point of a liquid are 73°C and -27°C respectively. What is the difference between these two points? (100°C)
39. What is the median of 2,3,5,7? (4)
40. The product of the ages of 3 brothers is 20 years. If two of them are twins, how old is the other? Assuming that their ages are whole numbers greater than one. (5 yrs.)
41. How much is $2^{12} - 2^{11}$? (2^{11})
42. If $(x-8)^2 = 100$, what is the minimum value of x ? (-2)
43. What is the H.C.F of $a^2 - b^2$ and $a^3 - b^3$? ($a - b$)
44. If $a-b=1$, $b-c=2$ and $c-a=d$, what is the value of d ? (-3)
45. Who is known as the father of Geometry? (Euclid)
46. What is the product of a number and its reciprocal? (1)
47. What is a polygon of 7 sides called? (Heptagon)
48. What is a polygon of 9 sides called? (Nonagon)
49. What is the total surface area of a cube whose side is 3cm? (54 sq.cm)
50. If $x + \frac{1}{x} = 2$, How much es equal to $x^2 + \frac{1}{x^2}$? (2)
51. If $ab=4$, $bc=5$ and $ca=20$, then what is the value of abc ? (20)
52. If $x=7$ and $y=-3$, then what value is difference of x and y ? (10)
53. What is the least number tha exactly divides 24, 18 and 12? (4)
54. What is the least number that is exactly divisible by 2, 3 and 4? (12)
55. Tell the area of circle whose radius is $\sqrt{7}$ m? (22 sq.m)
56. If $4:a=b:3$, wht is the product of? (12)

57. What is the exterior angle of a triangle whose two nonadjacent angles are 42° and 58° ? (100°)
58. What should be subtracted from a to get b? (a – b)
59. What is the side of a square whose perimeter is 100m? (25 m)
60. How many Kg make one quintal? (100 Kg)
61. What is the value of $125^{\frac{2}{3}}$? (25)
62. What is the supplement of 70° ? (110°)
63. What is the complement of 46° ? (44°)
64. If A is 77% of B, then A:B = what is the ratio of a and b? (77:100)
65. If A:B = 3:4, then A is equal to how much % of B? (75%)
66. Which number equal to $100 \div 100 \times 100 + 100 - 100$? (100)
67. What is the area of a rectangle whose sides are 9cm and 8cm? (72 sq.cm)
68. What is the length of a side of a square whose area is 361 sq.m? (19m)
69. What is the sum of 3 tenth and 7 tenth? (1)
70. What is the line joining the mid-point of the side of a triangle to its opposite vertex called? (Median)
71. How long is the hypotenuse of a right angled triangle whose two sides are 6cm and 8cm? (10cm)
72. If a=2 and b=3, then What value is equal to $a^b + b^a$? (17)
73. What are three numbers whose sum and product are same? (1,2,3)
74. If $\frac{3x^2}{2} = \frac{2}{3}$, then what are the possible values of x? ($\pm \frac{2}{3}$)
75. What is the rational factor of $\sqrt[n]{x^m}$? ($\sqrt[n]{x^{n-m}}$)
76. If $1/x = x/9$, what are the possible values of x? (± 3)
77. If $1 - x - x^2 = 0$, then what is the value of $1 + x + x^2 = ?$ (2)
78. What is the difference of 20×50 and 19×50 ? (50)
79. If $7^x \times 7^y = 7^{100}$, what is the average of x and y? (50)
80. In $8^a = 64$, what is the value of a? (2)
81. What are the next two numbers in the sequence 1,1,4,8,9,27,16? (64,25)
82. What is the area of right triangle whose sides are 6cm, 8cm and 10cm? (24 sq.cm)
83. What are the prime numbers between 20 and 35? (23,29,31)
84. What is the total surface area of a cube whose side is 2 cm? (24 sq.cm)
85. Ten times of a number is equal to 5 times 20, then what is the number? (10)
86. A coin is tossed twice, what is the probability of getting both heads? ($\frac{1}{4}$)
87. A coin is tossed twice, what is the probability of getting both tails? ($\frac{1}{4}$)
88. A bag contains 4 red and 6 green marbles. A marble is drawn at random, what is the probability of drawing a red marble? ($\frac{2}{5}$)
89. A bag contains 4 red and 6 green marbles. A marble is drawn at random, what is the probability of drawing a green marble? ($\frac{3}{5}$)
90. The mean of a and b is 5, and the mean of c and d is 15, what is the mean of a, b, c and d? (10)
91. How many circular coins of radius 2 cm can be adjusted inside a square of side 8 cm? (4)
92. How much is a quarter of 5 dozens? (15)
93. Which is greater? 40% of 50 or 50% of 40? (Equal)
94. What are prime factors of 111? (3 and 37)
95. The perimeter of a square is 16 cm. what is its area? (16)
96. How many diameters of a circle can be drawn? (Infinite)
97. What are the parallel sides of a trapezium called? (bases)
98. What are the non parallel sides of a trapezium called? (legs)
99. What is a rectangle having adjacent sides equal called? (square)
100. What is the line joining the vertex and middle point of opposite side of a triangle called? (Median)
101. What is a triangle having a pair of angles equal called? (an isosceles triangle)
102. What is a triangle having all the angles equal called? (an equilateral triangle)
- What is a triangle having all the medians perpendicular to opposite sides called? (an equilateral triangle)
103. What is the point of intersection of the medians of a triangle is called? (centroid)
104. What is the point of intersection of the bisector of the angles of a triangle called? (in centre)
105. What is the point of intersection of the altitudes of a triangle called? (ortho- centre)
106. Which is the longest chord of a circle? Diameter)
107. Which is the Greek letter that is used to denote the ratio of the circumference and the diameter of a circle? (π or 'pi')
108. What is the region between a chord and the arc of a circle called? (segment)
109. What is the region between two radii and the arc of a circle called? (sector)
110. What are the circles having same centre called? (Concentric circles)
111. What is a quadrilateral inscribed in a circle called? (Cyclic quadrilateral)
112. What is the sum of opposite angles of a cyclic quadrilateral? (180°)

113. What is the size of an angle made by a diameter with the tangent at the point of contact?	(90^0)
114. What is a line that touches the circumference of a circle at a point called?	(Tangent)
115. What is a line that intersects the circumference of a circle at two points called?	(Secant)
116. What is supplement of x^0 ?	$[180^0 - x^0]$
117. What is complement of 90^0 ?	$[0^0]$
118. What is the formula to find the curve a surface area of a cylinder?	$[2\pi rh]$
119. What is the formula to find the total surface area of a cylinder?	$[2\pi r(r + h)]$
120. What is the formula to find the volume of a solid cylinder?	$[\pi r^2 h]$
121. What is the formula to find the surface area of a solid sphere?	$[4\pi r^2]$
122. What is the formula to find the volume of a solid sphere?	$[4/3\pi r^3 \text{ or } 1/6 \pi d^3]$
123. What is the formula to find the curve surface area of a cone?	$[\pi r l]$
124. What is the formula to find the total surface area of a cone?	$[\pi r(r + l)]$
125. What is the formula to find the total surface area of a cuboid?	$[2(lb + lh + bh)]$
126. What is the formula to find the total surface area of a cube?	$[6l^2]$
127. How many kilograms make one quintal?	$[100 \text{ kg}]$
128. How many quintals make one metric ton?	$[10]$
129. How many cubic centimeters make one liter?	$[1000 \text{ cm}^3]$
130. How many litters make one kilolitre?	$[1000 \text{ cm}^3]$
131. What is the formula to find the volume of a solid cone?	$[1/3 \pi r^2 h]$
132. What is the formula to find the volume of a solid pyramid?	$[1/3 \times \text{base area} \times \text{height}]$
133. What is the formula find the surface area of a closed square pyramid?	$[a^2 + 2al]$
134. What is the formula to find the volume of a prism?	$[\text{Base area} \times \text{height}]$
135. What is a set having no elements called?	(Empty/Void/Null set)
136. What is a set having one element called?	(Singleton set)
137. What are the sets having no elements in common called?	(Disjoint sets)
138. What are the sets having some elements in common called?	(Overlapping sets)
139. What is the area of a square in diagonal form?	$[\frac{1}{2} d^2]$
140. What is the area of a rhombus in diagonal form?	$[\frac{1}{2} d_1 \times d_2]$
141. What is the area of a trapezium?	$[\frac{1}{2} (b_1 + b_2) \times h]$
142. What is the area of a quadrilateral?	$[\frac{1}{2} d \times (p_1 + p_2)]$
143. What is the area of a kite?	$[\frac{1}{2} d_1 \times d_2]$
144. What is Heron's formula for the area of a triangle?	$\sqrt{s(s-a)(s-b)(s-c)}$
145. What is the formula for the area of an equilateral triangle	$\frac{\sqrt{3}}{4} a^2$
146. What is the value of $\text{Sin}30^0$?	$[\frac{1}{2}]$
147. What is the value of $\text{Sin}45^0$?	$[\frac{1}{\sqrt{2}}]$
148. What is the value of $\text{Sin}60^0$?	$[\frac{\sqrt{3}}{2}]$
149. What is the value of $\text{Cos}60^0$?	$[\frac{1}{2}]$
150. What is the value of $\text{Cos}30^0$?	$[\frac{\sqrt{3}}{2}]$
151. What is the value of $\text{Tan}30^0$?	$[\frac{1}{\sqrt{3}}]$
152. What is the value of $\text{Tan}45^0$?	$[1]$
153. What is the Value of $\text{Tan}60^0$?	$[\sqrt{3}]$
154. What power of 10 gives a million?	$[6]$
155. What power of 10 gives a billion?	$[9]$
156. What power of 10 gives a trillion?	$[12]$
157. What power of 10 gives a googol?	$[100]$
158. What is a curved line that is part of the circumference of a circle called?	$[\text{arc}]$
159. What is a line segment within a circle that touches 2 points on the circle called?	$[\text{chord}]$
160. What is the distance around the circle called?	$[\text{circumference}]$
161. What is the longest distance from one end of a circle to the other called?	$[\text{diameter}]$
162. Which Greek letter is used to represent ratio of the circumference to the diameter of any circle is called?	$[\pi (\pi)]$
163. What is distance from center of circle to any point on it called?	$[\text{radius}]$
164. What is a line perpendicular to the radius that touches ONLY one point on the circle called?	$[\text{tangent}]$
165. What is the full form of Sec?	$[\text{Secant}]$
166. What is the full form of Cosec?	$[\text{Cosecant}]$
167. What is the full form of Cot?	$[\text{Cotangent}]$

168. What index of x will make it equal to $\frac{1}{x}$? [-1]
169. What is the value of $9^{\frac{1}{2}}$? [3]
170. What is the cube-root of 216? [6]
171. What is the value of $\sqrt{25} + \sqrt{9}$? [8]
172. What is the value of $\sqrt{16} \times \sqrt{4}$? [8]
173. Find the compound ratio of 2:3 and 3:4. [1:2]
174. Find the ratio of 20 boys to 30 girls. [2:3]
175. Find the ratio of 1kg. to 500 grams. [2:1]
176. Find the ratio of 2 hours. to 40 minutes. [3:1]
177. What is the value of $6^2 + 8^2$? [100]
178. What is the value of $11^2 + 10^2$? [221]
179. What is the value of $2^2 \times 3^2 \times (4)^0$? [36]
180. What is the value of 4 fifth + 6 fifth? [2]
181. What is the perimeter of a square whose side is 15meters? [60meters]
182. What would be the length of the side of a square whose area is 225sq.meters? [15 meters]
183. Find the side of a square whose perimeter is 72 meters. [18 meters]
184. What is the value of $\sqrt{12} \times \sqrt{3}$ in rational number? [6]
185. What should be added to x to get z ? [$z - x$]
186. Find the degree of the polynomial $5x^2y$. [3]
187. How many sides does A polygon at least have? [3 sides]
188. What is the average of 4,8 and 18. [10]
189. What is the speed of an object in m/sec which travels 100 meters in 5 seconds? [20m/sec]
190. 5 dozen sweets are placed equally in 6 plates. What is the number of sweets in each plate? [10]
191. How many edges has a hexagonal pencil of not sharpened? [8]
192. Tell the biggest number that can be written with four 1s. [11^{11}]
193. Tell the biggest number that can be written with two 9s. [9^9]
194. If A is 67% of B then A:B equal to how much? [67:100]
195. If A:B = 3:4 then A is how much percentage of B? [75%]
196. What is the prime number next to 100? [101]
197. What is the mean of 3,9 and 12? [8]
198. A dozen consists of 12 objects. How many objects are there in 15 dozens? [180]
199. Find the percent of 0.07. [7%]
200. Find the smallest number divisible by 4 and 6. [12]
201. 20% of Rs.300 is how much? [Rs.60]
202. What is the number whose 10% is 2? [20]
203. 5% of what number is equal to 5? [100]
204. If selling price = Rs.185, discount = Rs.15, what is its marked price? [Rs.200]
205. If marked price = Rs100, discount = 20%, find selling price. [Rs.80]
206. Find the mean proportional between 2 and 8. [4]
207. What is the product of $(x + y)$ and $(x^2 - xy + y^2)$? [$x^3 + y^3$]
208. How much is equal to $(2^3)^2$? [64]
209. Find the complement of 62° . [28°]
210. Find the supplement of 82° . [98°]
211. If one angle of the linear pair is 68° , find the other angle. [112°]
212. If $(2x)^0$ and $(3x)^0$ form a complementary angle, find the value of x . [$x = 18^\circ$]
213. If $(7x)^0$ and $(8x)^0$ form a supplementary angle, find the value of x . [$x = 12^\circ$]
214. If $(5x)^0$ and $(13x)^0$ form a linear pair, find the value of x . [$x = 10^\circ$]
215. What is the value of $(2xyz)^0$? [1]
216. What is the value of $\frac{3}{4} + \frac{5}{4}$? [2]
217. What is the value of $\frac{5}{7} - \frac{8}{7}$? [$-\frac{3}{7}$]
218. If $x^2 = 36$, find the value of x ? [$x = \pm 6$]
219. If $x^2 = \frac{25}{49}$, find the value of x . [$x = \pm \frac{5}{7}$]
220. If $x^2 - 16 = 0$, what is the value of x ? [± 4]
221. The sum of interior angle of a triangle is equal to how much? [180°]
222. What is the relation between base angles of an isosceles triangle? [equal]
223. What is a triangle having three sides equal called? [equilateral triangle]
224. What is a triangle having two sides equal called? [isosceles triangle]
225. What is a triangle having neither sides equal called? [scalene triangle]
226. What is a closed figure formed by four straight lines called? [quadrilateral]
227. What is a polygon having five sides is called? [pentagon]