



**GAIL DAV PUBLIC SCHOOL**  
**GAIL GAON, DIBIYAPUR**  
**SESSION: 2026-27**  
**CLASS: - IX (MATHEMATICS)**  
**CHAPTER: 1 (NUMBER SYSTEM)**


Q.No.	QUESTIONS	
1.	Which of the following is not a rational number? (a) 0 (b) $22/7$	(c) $-5$ (d) $\pi$
2.	The value of $(1296)^{0.32} \times (1296)^{-0.07}$ is (a) 6 (b) 26	(c) 16 (d) 36
3.	During a Mathematics class, the teacher instructs Riya to insert a rational and an irrational number between 5 and 7. Which of the following can't be an answer? (a) 6 (b) 6.5	(c) $\sqrt{35}$ (d) $7/3$
4.	Which of the following statement is not true? (a) The division of two irrational numbers can be a rational number. (b) The division of two irrational numbers is always irrational. (c) If an irrational number is divided by a rational (except zero), the result is irrational. (d) The sum of rational and irrational number is always an irrational number.	
5.	<b>Assertion:</b> One rational number lying between 4 and 5 is 4.5 <b>Reason:</b> A rational number lying between two rational number x and y is $\frac{1}{2}(x+y)$ (a) Both assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A) (b) Both assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the assertion (A) (c) Assertion (A) is true, but the Reason (R) is false. (d) Assertion (A) is false, but the Reason (R) is true	
6.	<b>Assertion (A):</b> The sum of two irrational number $2 + \sqrt{5}$ and $1 + \sqrt{3}$ is an irrational number. <b>Reason (R):</b> The sum of irrational numbers is always an irrational number. (a) Both assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A) (b) Both assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the assertion (A) (c) Assertion (A) is true, but the Reason (R) is false. (d) Assertion (A) is false, but the Reason (R) is true	
7.	Complete the following statements. (a) Every point on the number line corresponds to a which may be either _____ or _____ number.	

	<p>(b) The decimal form of an irrational number is neither _____ nor _____.</p> <p>(c) The decimal representation of the rational number <math>8 / 27</math> is _____.</p> <p>(d) <math>\pi</math> is an _____ number.</p>	
8.	Express $2.\overline{36} + 0.\overline{23}$ as a fraction in the simplest form.	
9.	Solve the expression and obtain a whole number. $4\sqrt[3]{40} - 2\sqrt[3]{320} + 9\sqrt[3]{625} - 45\sqrt[3]{5}$	
10.	If $x = 7 + 4\sqrt{3}$ then find the value of $x^2 - \frac{1}{x^2}$	
11.	If $x = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$ and $y = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$ , find the value of $x^2 + y^2 + xy$	
12.	Show that: $\frac{1}{3-\sqrt{8}} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-2} = 5$	
13.	If $x = \frac{2-\sqrt{5}}{2+\sqrt{5}}$ and $y = \frac{2+\sqrt{5}}{2-\sqrt{5}}$ , then value of $x^2 - y^2$ .	
14.	Give an example for each, if two irrational numbers, whose <ul style="list-style-type: none"> <li>(a) Difference is a rational number.</li> <li>(b) Difference is an irrational number.</li> <li>(c) Sum is a rational number.</li> <li>(d) Sum is irrational number.</li> <li>(e) Product is an irrational number.</li> <li>(f) Product is an irrational number.</li> </ul>	
15.	Represent $\sqrt{7}$ on the number line.	
16.	If $25^{(x-1)} = 5^{(2x-1)} - 100$ find the value of x.	
17.	Prove that: $\frac{2^{30}+2^{29}+2^{28}}{2^{31}+2^{30}-2^{29}} = \frac{7}{10}$	
18.	If $a = 3$ and $b = -2$ find the value of $a^b + b^a$	
19.	Solve the equation $7^{2x+3} = 1$ for x.	
20.	Insert 7 rational number between $3/2$ and $2/3$ .	



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**CLASS: - IX (MATHEMATICS)**  
**CHAPTER: -2 (POLYNOMIALS)**

Q.No.	QUESTIONS	
1.	If $(x + 1)$ is a factor of the polynomial $(2x^2 + Kx)$ then the value of $k$ is (a) $-2$ (c) $-3$ (b) $2$ (d) $3$	
2.	If $\frac{x}{y} + \frac{y}{x} = -1$ , where $x, y \neq 0$ then the value of $(x^3 - y^3)$ is (a) $1$ (c) $-1$ (b) $0$ (d) $\frac{1}{2}$	
3.	If $(x + 2)$ and $(x - 1)$ are factors of the polynomial $p(x) = x^3 + 10x^2 + mx + n$ then (a) $m = 5, n = 3$ (c) $m = 17, n = -8$ (b) $m = 7, n = -18$ (d) None of these	
4.	If $a + b + c = 0$ then the value of $(a^3 + b^3 + c^3)$ is (a) $0$ (c) $abc$ (b) $2abc$ (d) $3abc$	
5.	The coefficient of $x$ in the expression of $(x + 3)^3$ is (a) $1$ (c) $9$ (b) $18$ (d) $27$	
6.	If $x + y + z = 9$ and $xy + yz + zx = 23$ then find the value $(x^3 + y^3 + z^3 - 3xyz)$ .	
7.	Factorise: (a) $x^8 - 1$ (e) $7x^2 + 2\sqrt{14} + 2$ (b) $6 - x - x^2$ (f) $4x^4 + 7x^2 - 2$ (c) $\sqrt{5}x^2 + 2x + 3\sqrt{5}$ (g) $\frac{1}{3}x^2 - 2x - 9$ (d) $x^3 + 3x^2 + 3x - 7$ (h) $a^3 - \frac{1}{a^3} - 2a + \frac{2}{a}$	
8.	Prove that $\frac{0.85x \cdot 0.85x \cdot 0.85 + 0.15x \cdot 0.15x \cdot 0.15}{0.85x \cdot 0.85 - 0.85x \cdot 0.15 + 0.15x \cdot 0.15} = 1$	
9.	Without actual division, prove that $2x^4 - 5x^3 + 2x^2 - x + 2$ is divisible by $x^2 - 3x + 2$ .	
10.	What must be added to $(x^3 - 3x^2 + 4x - 15)$ to obtain a polynomial which is exactly divisible by $(x - 3)$ ?	
11.	Show that $(p - 1)$ is a factor of $(p^{10} - 1)$ and also $(p^{11} - 1)$ both.	
12.	Use factor theorem to prove that $(x + a)$ is a factor of $(x^n + a^n)$ for any odd positive number $n$ .	
13.	Find the value of $x^3 + y^3$ , if $x + y = 15$ and $xy = 25$ .	
14.	<b>Assertion:</b> if the area of ball is $x^2 + x - 2$ , then its zeroes are $2$ and $-2$ . <b>Reason:</b> The quadratic polynomial can be factorised using splitting the middle term method.	

	<p>(a) Both assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A)</p> <p>(b) Both assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the assertion (A)</p> <p>(c) Assertion (A) is true, but the Reason (R) is false.</p> <p>(d) Assertion (A) is false, but the Reason (R) is true</p>	
15.	<p><b>Assertion:</b> The factorisation of <math>z^3 + 125</math> is <math>(z + 5)(z^2 + 25 - 5z)</math>.</p> <p><b>Reason:</b> <math>x^3 + y^3 = (x + y)(x^2 - y^2 - xy)</math></p> <p>(e) Both assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A)</p> <p>(f) Both assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the assertion (A)</p> <p>(g) Assertion (A) is true, but the Reason (R) is false.</p> <p>(h) Assertion (A) is false, but the Reason (R) is true</p>	
16.	<p>An object which is thrown or projected into the air, subject to only the acceleration of gravity is called a projectile and its path is called its trajectory. The curved path a projectile follow was shown by Galileo to be a parabola. Parabola is represented by a polynomial. If the polynomial to represent the distance covered is <math>p(x) = -6x^2 + 48x + 24</math>.</p> <div style="text-align: center;">  </div> <p>(a) What is the degree of polynomial?</p> <p>(b) Find the height of the projectile 5 sec after it's launched.</p> <p>(c) If the polynomial to represent the distance covered is given by, <math>p(x) = -6x^2 + 48x + 24</math>, then find the value of <math>p(2)</math> and <math>p(4)</math>.</p>	
17.	<p>If both <math>(x - 2)</math> and <math>(x - \frac{1}{2})</math> are the factor of <math>px^2 + 5x + r</math>, prove that <math>p = r</math>.</p>	
18.	<p>Factorise:</p> <p>(a) <math>7(x - 2y)^2 - 25(x-2y) + 12</math></p> <p>(b) <math>10\left(\left(3x + \frac{1}{x}\right)^2 - \left(3x - \frac{1}{x}\right) - 3\right)</math></p>	