Holidays Home work

Class: IX

Activity

- Construct a Square Root Spiral .
- Represent $\sqrt{10}$ and $\sqrt{5}$ on number line.
- Verify the Algebraic Identity $(a+b)^2 = a^2 + 2ab+b^2$ using grid paper.
- Represent $\sqrt{6.3}$ geometrically

Project: Select any one topic out of the following topics and present under the following heads

(i)   Introduction of the topic
(ii)   Relevance/objective of the topic
(iii)   Different contains (sub topic) with appropriate Examples
(iv)   Application
(v)   Conclusions
(vi)   Bibliography

Topics are as follows

(i)   Euclid Geometry
(ii)   Probability and Chances
(iii)   Statistics
(iv)   Number system
(v)   Vaidic maths
(vi)   Maths and Architecture

Application :

1. Write 10 rational numbers between $\frac{2}{3}$ and $\frac{3}{5}$
2. Simplify: $\left(4+\sqrt{3}\right)\left(4-\sqrt{3}\right)$
3. Rationalise the denominator of $\dfrac{1}{\sqrt{3}-\sqrt{2}}$.
4. Express the following as a fraction in the simplest form.
   (i) $2.\overline{23}$ (ii) $3.1\overline{23}$ (iii) $1.\overline{3}$
5. Simplify $11.4\overline{565} \div 2.\overline{67}$
6. If $x = \left(2+\sqrt{3}\right)$, find the value of (i) $x +\frac{1}{x}$ (ii) $x^2 +\dfrac{1}{x^2}$

7. Write 5 irrational numbers between $\frac{5}{7}$ and $\frac{8}{11}$

8. Find remainder if p(x) is divided by g(x)
   (ii)   (i) P(x)= $x^3 + 4x^2 -7x +3$; g(x) = x +2
   (iii)   (ii) P(x)= $x^3 - 7x^2 +3x +3$; g(x) = x -1

HOTS

9. Factorise: $x^4 - 3x^2y^2 +y^4$

10. Show that : $\dfrac{1}{3-\sqrt{8}} - \dfrac{1}{\sqrt{8}-\sqrt{7}} + \dfrac{1}{\sqrt{7}-\sqrt{6}} - \dfrac{1}{\sqrt{6}-\sqrt{5}} + \dfrac{1}{\sqrt{5}-2} = 5$

MULTIPLE CHOICE QUESTIONS

1. Which one is not a polynomial
(a) $4x^2 + 2x - 1$
(b) $y + \dfrac{3}{y}$
(c) $x^3 - 1$
(d) $y^2 + 5y + 1$

2. The polynomial $px^2 + qx + rx^4 + 5$ is of tyep
(a) linear
(b) quadratic
(c) cubic
(d) Biquadratic

3. Identify the polynomial
(a) $x^{-2} + x^{-1} + 5$
(b) $x^2 + 5\sqrt{x} + 7$
(c) $\dfrac{1}{x^3} + 7$
(d) $3x^2 + 7$

4. The zero of the polynomial $p(x) = 2x + 5$ is
(a) 2
(b) 5
(c) $\dfrac{2}{5}$
(d) $-\dfrac{5}{2}$

5. The number of zeros of $x^2 + 4x + 2$
(a) 1
(b) 2
(c) 3
(d) none of these

6. The polynomial of type $ax^2 + bx + c$, $a = 0$ is of type
(a) linear
(b) quadratic
(c) cubic
(d) Biquadratic

7. The value of k, if $(x - 1)$ is a factor of $4x^3 + 3x^2 - 4x + k$, is
(a) 1
(b) 2
(c) −3
(d) 3

8. The degree of polynomial $p(x) = x + \sqrt{x^2 + 1}$ is
(a) 0
(b) 2
(c) 1
(d) 3

9. If $3 + 5 - 8 = 0$, then the value of $(3)^3 + (5)^3 - (8)^3$ is
(a) 260
(b) −360
(c) −160
(d) 160

10. If value of 104×96 is

(a) 9984
(b) 9469
(c) 10234
(d) 11324

11. The value of 5.63 × 5.63 + 11.26 × 2.37 + 2.37 × 2.37 is

(a) 237
(b) 126
(c) 56
(d) 64

12. The value of $\dfrac{(361)^3 + (139)^3}{(361)^2 - 361 \times 139 + (139)^2}$ is

(a) 300
(b) 500
(c) 400
(d) 600

13. If x + y = 3, $x^2 + y^2 = 5$ then xy is

(a) 1
(b) 3
(c) 2
(d) 5

14. If x + 2 is a factor of $x^3 - 2ax^2 + 16$, then value of a is

(a) 3
(b) 1
(c) 4
(d) 2

15. If one of the factors of $x^2 + x - 20$ is (x + 5). Find the other (a) x − 4

(b) x + 2
(c) x + 4
(d) x − 5

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