INTERNATIONAL INDIAN SCHOOL, RIYADH

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WORK SHEET – 2

CLASS : IX SUBJECT: MATHEMATICS LESSON: POLYNOMIALS

June 2012 PREPARED BY: Subject-Teacher : D.A.EMIL JASON

1. Find the zeroes of the following polynomials:

   i) $x+1$ ii) $2x-1$ iii) $x-\sqrt{3}$ iv) $3x-\pi$

   v) $3x+2$ vi) $\sqrt{2}x-1$ vii) $(x-1)(x+2)$ viii) $ax+b$

2. Verify whether $\frac{1}{2}$ and -1 are zeroes of the polynomial $f(x) = 2x^2 + x - 1$

3. If -2 is a zero of the polynomial $3x^2+2x+k$, find the value of k.

4. Find the remainder when $p(x) = 4x^3 - 12x^2 + 14x - 3$ is divided by $x - \frac{1}{2}$

5. Verify whether $f(x) = 4x^3 + 4x^2 - x - 1$ is exactly divisible by $2x+1$

6. Find the value of 'a' so that $p(x) = x^3 - ax^2 - 13x + 15$ is exactly divisible by $x-1$

7. If $x-1$ and $x+3$ are factors of $x^3 - ax^2 - 13x + b$, find the values of a and b.

8. Find the values of a and b so that $x-1$ and $x+2$ are factors of $f(x) = 2x^3 + ax^2 + bx - 14$

9. If $p(x) = ax^3 + 4x^2 + 3x - 4$ and $q(x) = x^3 - 4x + a$ leave the same remainder when divided by $x-3$, find the value of a

10. Factorise by splitting the middle term:

i) $3x^2 - 14x + 8$ ii) $4x^2 - 17x - 21$ iii) $5x^2 - 16x - 21$

iv) $6x^2 - x - 15$ v) $7x^2 - 16x + 4$ vi) $8x^2 - 6x - 9$

11. Factorise using factor theorem:

i) $x^3 + 6x^2 + 11x + 6$ ii) $x^3 + 4x^2 + x - 6$

iii) $x^3 - 13x - 12$ iv) $2x^3 + 3x^2 - 3x - 2$

12. Factorise using suitable identities:

i) $4x^2 - 36x + 81$ ii) $x^2 + 2 + \frac{1}{x^2}$ iii) $x^3 - x$

iv) $x^3 + 3x^2 + 3x + 1$ v) $25x^2 - 9y^2$ vi) $x^3 + 1$

vii) $x^3 - 3x + \frac{3}{x} - \frac{1}{x^3}$ viii) $x^3 - 8y^3$

ix) $a^3 + b^3 - 1 + 3ab$ x) $a^2 + b^2 + 2ab + 2a + 2b + 1$

13. Evaluate using suitable identities:

i) 103^2 ii) 98×102 iii) 18×8

iv) $(13)^3$ v) 51×49 vi) 97^2

vii) $51^2 - 49^2$ viii) 103×102 ix) $(-19)^3 + 10^3 + 9^3$

14. If $x^2 + 25x + 84 = (x + a)(x + b)$ find the values of a and b.

15. If $x^2 + 5\sqrt{5}x + 30 = (x + a)(x + 3\sqrt{5})$ find a.

16. Factorise $x^2 - 8x + 15$ by using Factor Theorem.

17. If $2x^3 + 5x^2 + 5x + k$ is exactly divisible by $x^2 + x + 1$ find the value of k