8th - Algebraic Expression & Identities -II

1. Use a Suitable identity to get each of the following Product
- $(x+3)(x+3)$ $[x^2+6x+9]$
- $(1.1m-0.4)\ (1.1m+0.4)$ $[1.21m^2-0.16]$
- $(x + a/2\ )^2$ $[\ x^2 +a^2/4 + xa]$
- $(6x^2 - 7y^2)^2$ $[36x^4 + 49y^4 - 84x^2y^2]$
- $(4/3x^2 + 3)^2$ $[16/9x^4 + 9 +8x^2]$

2. Use the identity $(x+a)(x+b) = x^2+(a+b)x+ab$ to find the following Product
(i)$(x+3)\ (x+7)$ $[x^2+10x+21]$
(ii) $(4x+5)(4x+1)$ $[16x^2 +24x+5]$
3. Find the following squares by using the identities
(i)$(b-7)^2$ $[b^2-14b+49]$
(ii) $(xy+3z)^2$ $[x^2\ y^2 + 6xyz +9z^2]$
4. Simplify
(i)$(a^2-b^2)^2$ $[a^4-2a^2b^2+b^4]$
(ii) $(2x+5)^2$ $[40x]$
5. Show that : $(a-b)\ (a+b) +(b-c)\ (b+c) +(c-a)\ (c+a)=0$
6. Using Identities, evaluate
(i) 998^2 [996004] (ii)1.05 ×9.5 [9.975]
7. Find the following products :
(i) $(2x^2)\ ,(-7xy^3),\ (2x^3)$ (ii) $(4p^2q^3)\ *(3pq)\ *(-2p^2q)$
(iii) $4mn^2,\ -2m^2n^2,\ -3mn^3$ (iv) $2xy^2,\ 3x^2z,\ xyz$
8. Subtract : $3x\ (x\ -y\ -z) + 3y\ (x + y - z)$ from $3\ (x + y)\ (x - y) + 3z\ (2t + z)$
9. Find the product $(x - 1)\ (3x^2 + 2x - 3)$ and verify the result when $x = -1$.
10. Evaluate the following using appropriate identities :
(i) $(2x - 3)^2$ $[4x^3 - 12x + 9]$
(ii) $(4x - 5y)^2$ $[16x^2 - 40xy + 25y^2]$
11. If $x^2 + 1/x^2 = 23$, find the value of $x + 1/x$. [5]
12. If $a^2 + b^2 = 99$, $ab = 9$, find the value of $a - b$. [9]
13. The value of $1.71 * 1.71 - 0.29 * 0.29$ is equal to? [2.84]
14. The value of $16x^2 - 24xy + 9y^2$, when $x = ¼$ and $y = 1$ [0]
15. If $x + 1/x = 4$, find : $x^2 + 1/x^2$ $x^4 +1/x^4$
16. If $x^2 + 1/x^2 = 27$ find : $x +1/x$ $x - 1/x$
17. If $x + y = 12$ and $xy = 14$ find the value of $x^2 + y^2$.
18. If $3x + 2y = 12$ and $xy = 6$, find the value of $9x^2 + 4y^2$
If $4x^2 + y^2 = 40$ and $xy = 6$, find the value of $2x + y$
19. Solve using identity: 68 X 72 101 X 99 $128^2 - 77^2$
20. Find x: $6x = 23^2 - 17^2$ $4x = 98^2 - 88^2$

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