



ST. LAWRENCE HIGH SCHOOL



A JESUIT CHRISTIAN MINORITY INSTITUTION

CLASS 8

SUBJECT :Algebra & Geometry

Work sheet 24

Marks:15

Revision – Algebraic identities continued

Date:11.5.20

Answer all the following questions(1×15=15)

1. Multiply $6x^3 - y + 3x^2y$ by $x^2 + y^2$.

- (A) $6x^5 - 3x^4y - 6x^3y^2 + 2x^2y^3 - y^4$
(B) $6x^5 + 3x^4y + 6x^3y^2 - x^2y + 3x^2y^3 - y^4$
(C) $6x^5 - 3x^4y + 6x^3y^2 + 2x^2y^3 - y^5$
(D) $6x^5 + 3x^4y - 6x^3y^2 + 2x^2y^3 - y^5$

2. If $3x + 4y = 18$ and $xy = 6$, find the value of $9x^2 + 16y^2$.

- (A) 180 (B) 144
(C) 324 (D) 170

3. Simplify :

$$\left[2x^2 - \frac{1}{400}y^2\right]^2 - \left[2x^2 + \frac{1}{400}y^2\right]^2$$

- (A) $-\frac{x^2y^2}{40}$ (B) $-\frac{x^2y^2}{50}$
(C) $\frac{xy}{50}$ (D) $-\frac{x^2y^2}{5}$

4. Square of $9x - 7xy$ is

- (A) $81x^2 + 49x^2y^2$
(B) $81x^2 - 49x^2y^2$
(C) $81x^2 + 49x^2y^2 - 126x^2y$
(D) $81x^2 + 49x^2y^2 - 63x^2y$

5. If $x^2 + \frac{1}{x^2} = 53$, find the value of $x - \frac{1}{x}$.

- (A) $\sqrt{51}$ (B) $\sqrt{53}$
(C) $\sqrt{61}$ (D) $\sqrt{63}$

6. If $3x - 7y = 10$ and $xy = -1$, then the value of $9x^2 + 49y^2$ is _____.

- (A) 58 (B) 142
(C) 104 (D) -104

7. The product of $(x^2 + 3x + 5)$ and $(x^2 - 1)$ is _____.

- (A) $x^4 + 3x^3 - 4x^2 - 3x - 5$
(B) $x^4 + 3x^3 + 4x^2 - 3x - 5$
(C) $x^4 + 3x^3 + 4x^2 + 3x - 5$
(D) $x^4 + x^3 + x + 5$

8. Find the missing term in the following problem.

$$\left(\frac{3x}{4} - \frac{4y}{3}\right)^2 = \frac{9x^2}{16} + \frac{16y^2}{9} + \underline{\quad?}$$

- (A) $2xy$ (B) $-2xy$
(C) $12xy$ (D) $-12xy$

9. What should be added to $4p^2 + 5p + 7$ to get $7p^2 + 2p + 9$?

- (A) $3p^2 - 3p + 2$ (B) $3p^2 + 3p + 2$
(C) $-3p^2 + 3p - 2$ (D) $3p^2 - 3p - 2$

10. Simplify :

$$\frac{3}{2}x^2(x^2 - 1) + \frac{1}{4}x^2(x^2 + x) - \frac{3}{4}x(x^3 - 1)$$

- (A) $x^4 + \frac{1}{2}x^3 + \frac{1}{4}x^2 + x$
(B) $2x^4 + \frac{1}{4}x^3 - \frac{3}{4}x^2 + \frac{1}{4}x$
(C) $x^4 + \frac{1}{4}x^3 - \frac{3}{2}x^2 + \frac{3}{4}x$
(D) $2x^4 + \frac{3}{4}x^3 - \frac{1}{4}x^2 + \frac{3}{4}x$

11. What must be subtracted from $x^4 + 2x^2 - 3x + 7$ to get $x^3 + x^2 + x - 1$?

- (A) $x^4 - x^3 + x^2 - 4x + 8$
 (B) $x^3 + x^2 - 4x + 8$
 (C) $x^4 - x^3 + x^2 + 4x - 8$
 (D) $x^4 - x^3 - x^2 + 4x - 8$

12. If $x + \frac{1}{x} = 5$, find the value of $x^4 + \frac{1}{x^4}$.

- (A) 144 (B) 400
 (C) 236 (D) 527

13. Multiply : $\left(4x + \frac{3y}{5}\right)$ and $\left(3x - \frac{4y}{5}\right)$

- (A) $12x^2 + \frac{7xy}{5} - \frac{12y^2}{25}$
 (B) $12x^2 + \frac{7xy}{5} + \frac{12y^2}{5}$
 (C) $12x^2 - \frac{7xy}{5} - \frac{12y^2}{25}$
 (D) None of these

14. Add : $5x^2 - \frac{1}{3}x + \frac{5}{2}$, $-\frac{1}{2}x^2 + \frac{1}{2}x - \frac{1}{3}$ and $-2x^2 + \frac{1}{5}x - \frac{1}{6}$.

- (A) $\frac{5}{2}x^2 + \frac{11}{30}x + 2$
 (B) $\frac{3}{2}x^2 + \frac{30}{11}x + 3$
 (C) $\frac{5}{2}x^2 + \frac{13}{30}x + 1$
 (D) $\frac{3}{4}x^2 + \frac{12}{11}x + 5$

15. Find the value of a if $pqa = (3p + q)^2 - (3p - q)^2$.

- (A) 11 (B) 21
 (C) 10 (D) 12

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