ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

CLASS 8

SUBJECT : Algebra & Geometry   **Work sheet 23 answer key**

Marks:15   **Revision – Algebraic Identities**

Date:2.5.2020

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

MULTIPLE CHOICE QUESTION (MCQ)

Choose the correct answer from the alternatives given in each question:

1. The square of $(x + 3y)$ is
   (a) $x^2 + 3xy + 9y^2$; (b) $x^2 + 6xy + 6y^2$; (c) $x^2 + 6xy + 9y^2$; (d) $x^2 + 4xy + 8y^2$.

2. The square of $(2x - \frac{1}{2}y)$ is
   (a) $4x^2 - 2xy + \frac{1}{2}y^2$; (b) $4x^2 - 2xy + \frac{1}{4}y^2$; (c) $x^2 - 2xy + \frac{1}{4}y^2$; (d) $2x^2 - 2xy + \frac{1}{4}y^2$.

3. If $3x + 2y = 12$ and $xy = 6$, then the value of $9x^2 + 4y^2$ is
   (a) 72; (b) 54; (c) 76; (d) 60.

4. The value of $(105)^2$ by using an algebraic identity is
   (a) 11050; (b) 12025; (c) 11075; (d) 11025.

5. The value of $(99)^2$ by using an algebraic identity is
   (a) 9701; (b) 9801; (c) 9861; (d) 9821.

6. The value of the product $(2x + y)(2x - y)$ is
   (a) $4x^2 + y^2$; (b) $x^2 - 4y^2$; (c) $4x^2 - y^2$; (d) $2x^2 - y^2$.

7. The value of 98×102 by using an algebraic identity is
   (a) 9996; (b) 9994; (c) 9998; (d) 9986.

8. The value of $(997)^2$ by using an algebraic identity is

   (a) 993009; (b) 995009; (c) 996009; (d) 994009.

9. The value of 104×106 by using an algebraic identity is

   (a) 11014; (b) 11024; (c) 11048; (d) 11054.

10. The product $\left(\frac{x}{3} + \frac{y}{2} + 1\right)\left(\frac{x}{3} - \frac{y}{2} - 1\right)$ is

   (a) $\frac{1}{9}x^2 - \frac{1}{4}y^2 - y + 1$; (b) $\frac{1}{9}x^2 + \frac{1}{4}y^2 - y - 1$; (c) $\frac{1}{9}x^2 - \frac{1}{4}y^2 - y - 1$; (d) $\frac{x^2}{9} - \frac{1}{4}y^2 + y + 1$.

11. The value of the product $(x + y)(x - y)\left(x^2 + y^2\right)\left(x^4 + y^4\right)$ is

   (a) $x^8 - y^8$; (b) $x^6 - y^6$; (c) $x^8 + y^8$; (d) $x^4 - y^4$.

12. If $x + \frac{1}{x} = 3$, then the value of $x^4 + \frac{1}{x^4}$ is

   (a) 51; (b) 45; (c) 49; (d) 47.

13. If $x^2 + \frac{1}{x^2} = 23$, then the positive value of $x + \frac{1}{x}$ is

   (a) 3; (b) 5; (c) 6; (d) 4.

14. Using an identity the value of $0.56 \times 0.56 + 0.44 \times 0.44 + 2 \times 0.56 \times 0.44$ is

   (a) 1; (b) 2; (c) 0.9; (d) 0.8.

15. If $2x^2 + 2y^2 + 2z^2 - 2xy - 2yz - 2zx = 0$, then

   (a) $x = y$; (b) $y = z$; (c) $x = y = z$; (d) $z = x$.

<div align="right">Indranil Ghosh</div>

Answers

1. c
2. b
3. a
4. d
5. b
6. c
7. a
8. d
9. b
10. c
11. a
12. d
13. b
14. a
15. c