Name: Date:

01. Multiply **3x** and **4x.**

(a). $12x^2$ (b). x^2 (c). $6x^2$ (d). $7x^2$

02. Get the algebraic expressions using variables, constants and arithmetic operations. Subtraction of **p** from **q**

(a). p – q   (b). q – p   (c). pq   (d). p/q

03. Find the value of **$100 – 10x^3$** for **x = 2.**

(a). 10   (b). 30   (c). 20   (d). none of these

04. If the area of the rectangle is **119 cm²**. Its length is **(2x + 5) cm** and breadth is **(2x – 5) cm**, find the perimeter?

(a). 44 cm   (b). 48 cm   (c). 24 cm   (d). 119 cm

05. What should be added to **$x^2 + xy$** to obtain **$5x^2 – xy$**?

(a). $5x^2 – 2xy$ (b). $4x^2 – 2xy$ (c). $4x^2 – 3xy$ (d). $5x^2 – 3xy$

06. Get the algebraic expressions using variables, constants and arithmetic operations. Product of numbers **x** and **y** subtracted from **10**

(a). xy + 10   (b). 10xy   (c). xy – 10   (d). 10 – xy

07. Simplify: (5x – 2y) (5x + 2y).

(a). $49x^2 – 4y^2$ (b). $25x^2 – 9y^2$ (c). $14x^2 – 9y^2$ (d). $25x^2 – 4y^2$

08. When **a = 0, b = – 1,** find the value of the expressions: **$2a^2b + 2ab^2 + a(b)$.**

(a). 0   (b). 1   (c). 2   (d). 3

09. Subtract **a – b** from **3a – b + 4.**

(a). 3a + 5   (b). 2a + 4   (c). 3a + 4   (d). 2a + 5

10. Get the algebraic expressions using variables, constants and arithmetic operations. The number **x** multiplied by itself

(a). 2x   (b). x + 2   (c). x^2 (d). none of these

11. Simplify the expression: $(12m^2 – 9m + 5m – 4m^2 – 7m + 10)$.

(a). $8m^2 – 11m+15$ (b). $8m^2 – 15m+10$ (c). $9m^2 – 11m+10$ (d). $8m^2 – 11m + 10$

12. Subtract '**– $5y^2$**´ from **y^2.**

(a). $6y^2$ (b). $4y^2$ (c). $5y^2$ (d). $–6y^2$

13. Get the algebraic expressions using variables, constants and arithmetic operations. One– fourth of the sum of numbers m and n

(a). 4 (m + n)   (b). (m + n)/4   (c). m – n   (d). m + n

14. Find the value $a^2 + 2ab + b^2$ for a = 3, b = 2.

(a). 20   (b). 30   (c). 25   (d). none of these

15. Subtract $5a^2 - 7ab + 5b^2$ from $3ab - 2a^2 - 2b^2$.

    (a). $10ab - 9a^2 - 7b^2$ (b). $12ab - 7a^2 - 8b^2$ (c). $10ab - 7a^2 - 8b^2$ (d). $10ab - 7a^2 - 7b^2$

16. Multiply **2a** and **3(a).**

    (a). $6a^2$ (b). $5a^2$ (c). a^2 (d). $12a^2$

17. Get the algebraic expressions for subtraction of **z** from **y.**

    (a). $y + z$ (b). $y - z$ (c). $y \times z$ (d). y/z

18. Find the value of $x + 4$ for $x = 2$.

    (a). 2   (b). 4   (c). 6   (d). 8

19. Find the product of $(2x + 3y)(2x + 3y)$

    (a). $5x^2 + 9y^2 + 12xy$ (b). $4x^2 + 7y^2 + 12xy$ (c). $4x^2 + 9y^2 + 13xy$ (d). $4x^2 + 9y^2 + 12xy$

20. Find the product of $(3x - 5y)(3x - 5y)$

    (a). $16x^2 + 25y^2 - 30xy$ (b). $9x^2 + 36y^2 - 30xy$

    (c). $9x^2 + 25y^2 - 25xy$ (d). $9x^2 + 25y^2 - 30xy$

Q01. Fill in the blanks**:**

    (a)**.** When terms have different algebraic factor, they are called _____.

    (b)**.** An expression which contains one term is called _____.

    (c)**.** The ____ of an algebraic expression depends on the values of the variables forming the expression.

    (d)**.** When terms have the same algebraic factor, they are called _____.

    (e)**.** An expression which contains two unlike terms is called _____.

    (f). A _____ can take various values.

    (g)**.** An expression which contains three unlike terms is called _____.

    (h)**.** If a natural number is denoted by n, its successor is _____.

    (i)**.** A term is a product of _____.

    (j)**.** Factors containing variables are said to be _____.

    (k)**.** The _____ is the numerical factor in the term.

    (l)**.** Any expression with one or more terms is called a _____.

    (m)**.** Terms which have the same algebraic factors are _____.

    (n)**.** The general (nth) term of a number pattern (or a sequence) is an _____ in n.

    (o)**.** The sum (or difference) of two like terms is a _____.

Q02. Simplify these expressions and find their values, if **x = 3, a = − 1, b = − 2.**

    (a). $3a + 5 - 8x + 1$ (b). $10x - 3b - 4a - 5b^2$ (c). $3x - 5a - x^2 + 9b$ (d). $2b - 8x + 4x^2 + 4a$

Q03. Find the value of the following expressions for **a = 3, b = 2.**

    (a). $(a + b)^2$ (b). $13(7a - 4b)$ (c). $a^2 + 2ab + b^2$ (d). $a^3 - b^3$

Q04. Simplify the expressions and find the value if **x** is equal to **2.**

    (a). $x + 7 + 4(x - 5)$ (b). $3(x + 2) + 5x - 7$

Q05. Identify, in the following expressions, terms which are not constants. Give their numerical coefficients:

(a). $xy + 4$, $13 - y^2$ (b). $13 - y + 5y^2$ (c). $4p^2q - 3pq^2 + 5$

Q06. (a). If $z = 10$, find the value of $z^3 - 3(z - 10)$.

(b). If $p = -10$, find the value of $p^2 - 2p - 100$.

Q07. State whether a given pair of terms is of like or unlike terms.

(a). $4m^2p$, $4mp^2$ (b). $12xz$, $12x^2z^2$ (c). $8xy$, $4xy$ (d). $3xy^2$, $7x^2y$

Q08. Add:

(a). $14x + 10y - 12xy - 13$, $18 - 7x - 10y + 8xy$, $4xy$

(b). $5m - 7n$, $3n - 4m + 2$, $2m - 3mn - 5$

Q09. Simplify combining like terms:

(a). $3a - 2b - ab - (a - b + ab) + 3ab + b - a$

(b). $5x^2y - 5x^2 + 3yx^2 - 3y^2 + x^2 - y^2 + 8xy^2 - 3y^2$

Q10. From the sum of $2y^2 + 3yz$, $- y^2 - yz - z^2$ and $yz + 2z^2$, subtract the sum of $3y^2 - z^2$ and $- y^2 + yz + z^2$.

Q11. From the sum of $13x - 8y + 11$ and $- y - 11$, subtract $3x - 3y - 11$.

Q12. From the sum of $4 + 3x$ and $5 - 4x + 2x^2$, subtract the sum of $3x^2 - 5x$ and $-x^2 + 2x + 5$.

Q13. From the sum of $5y^2 + 3yz$, $- y^2 - xyz - 3z^2$ and $xyz + 2z^2$, subtract the sum of $y^2 - z^2$ and $-y^2 + yz + 2z^2$.

Q14. What should be added to $x^2 + xy + y^2$ to obtain $2x^2 + 3xy$?

Q15. What should be taken away from $3x^2 - 4y^2 + 5xy + 20$ to obtain $- x^2 - y^2 + 6xy + 20$?

Q16. What should be the value of a if the value of $2x^2 + x - a$ equals to 5, when $x = 0$?

Q17. What should be subtracted from $2a + 8b + 10$ to get $- 3a + 7b + 16$?

Q18. Find the product:

(a). $(\frac{2}{3}xyz)(\frac{3}{4}x^2y^2z^2)(\frac{4}{5}x^3y^3z^3)$ (b). $(2x - \frac{1}{2}y)(\frac{3}{4}x - 10y + 8)$