Grade 8 Algebraic Expressions and Identities Worksheets

Grade 8 Maths Algebraic Expressions and Identities Multiple Choice Questions (MCQs)

1. **What are the co-efficients of y in the expression $yz^2 + 5$?**
(a) 5
(b) z
(c) z^2
(d) None of these
2. **The constant term in the expression $1 + x^2 + x$ is**
(a) 1
(b) 2
(c) x
(d) x^2
3. **The expression x + y – xy is:**
(a) Monomial
(b) Binomial
(c) Trinomial
(d) Quadrinomial
4. **From the following expressions 3ab, a^2, b^2, a, 5ab, -2ab, $2a^2$ the three like terms are:**
(a) 3ab, 5ab, -2ab
(b) a^2, a, $2a^2$
(c) 3ab, a^2, b^2
(d) $2a^2$, a^2, a
5. **The value of expression 5n – 2, when n = -2 is:**
(a) -12
(b) 8
(c) 1
(d) -8
6. **If the length of each side of the equilateral triangle is l, then the perimeter of the equilateral triangle is:**
(a) 3l
(b) 3 + 1
(c) 3 – l
(d) $\frac{l}{3}$
7. **Which of the following is trinomial:**
(a) 2a + 6b – 1
(b) 1

(c) 5a – 7
(d) a + b + c – 3
8. **The value of expression $5n^2 + 5n – 2$ for n = -2 is**
(a) 13
(b) 3
(c) 8
(d) 12
9. **The expression for the statement: "y multiplied by 10 and then 7 added to product".**
(a) 10 + y + 7
(b) 7y + 10
(c) 10y + 7
(d) 10y
10. **The numerical co-efficient of y in the expression 2x + 3y + 7z is:**
(a) 2
(b) 3
(c) 7
(d) 3y
11. **'2' is common factor of the expressions:**
(a) $12a^2$ b, $15ab^2$
(b) 5xy, 10x
(c) $10x^2$, $-18x^3$, $14x^4$
(d) 33y, -22z
12. **The area of a rectangle is 'xy' where V is length and ly' is breadth. If the length of rectangle is increased by 5 units and breadth is decreased by 3 units, the new area of rectangle will be:**
(a) (x – y)(x + 3)
(b) xy + 15
(c) (x + 5)(y – 3)
(d) xy + 5 – 3
13. **The product of a^2, $2a^2$, $5a^{10}$ is**
(a) 10 a^{14}
(b) 7 a^{14}
(c) 10 a^{22}
(d) 10 a^{40}
14. **Which of the following expression is trinomial:**
(a) xyz
(b) xy + z
(c) x + y + z
(d) x + yz
15. **Value of expression $a(a^2 + a + 1) + 5$ for ' a' = 0 is:**
(a) a + 5
(b) 1

(c) 6
(d) 5

16. **Evalute $(4x + y)^2$ by suitable identity:**
(a) $4x^2 + y^2 + 8x$
(b) $4x + y + 8xy$
(c) $16x^2 + y^2 + 8xy$
(d) $16x^2 + y^2 + 8$

17. **$(a – b)^2$ is equal to:**
(a) $a^2 + b^2 – 2ab$
(b) $a^2 – b^2 + 2ab$
(c) $a^2 – b^2$
(d) $(a – b)(a + b)$

18. **If ab = 6 and a + b = 5 then the value of $(a^2 + b^2)$ is:**
(a) 11
(b) 12
(c) 13
(d) 16

19. **If x – y = 7 and xy = 9, then the value of $(x^2 + y^2)$ is:**
(a) 64
(b) 67
(c) 63
(d) None of these

20. **If $\left(x + \frac{1}{x}\right)$ = 4, then the value of $\left(x^2 + \frac{1}{x^2}\right)$ is:**
(a) 14
(b) 12
(c) 16
(d) None of these

Class 8 Maths Algebraic Expressions and Identities Fill In The Blanks

1. The number of terms in the product of $(3x^2 + 6xy + 5y^2)$ and (3x + 4y – 13) is …….. .
2. In the product of $(4a^3 + 5a^2 – 11a)$ and $(-15 + 3a – 7a^2)$, the co-efficient of a^4 is …… .
3. The value of (3a – 4b + 2) × (5a + 6) for a = 1 and b = -2 is …… .
4. The value of $\frac{(67.542)^2 - (32.458)^2}{75.458 - 40.374}$ is …… .
5. Find the product: $(A + B).(A – B).(A^2 + B^2).(A^4 + B^4)$ = …….. .

Class 8 Maths Algebraic Expressions and Identities True(T) Or False(F)

1. If, $a + \frac{1}{a} = 7$, then $a^2 + \frac{1}{a^2} = 49$
2. The product of a binomial and a trinomial will always have 5 terms.
3. $(3x^2 + 5y^2) \times (5x^5 + 8y^3) = 15x^7 + 24x^2y^3 + 25x^5y^2 + 40y^5$

Class 8 Maths Algebraic Expressions and Identities Very Short Answer Type Questions

1. What are the co-efficients of y in the expression 4x – 3 y?
2. What is the statement for the expression 3mn + 5
3. What is the numerical co-efficient of y^2 in the expression $2x^2y – 15xy^2 + 7y$
4. What must be subtracted from 2a + b to get 2a – b.
5. What must be added to 3x + y to get 2x + 3y?
6. What should be value of 'a' if $y^2 + y – a$ equals to 3 for y = 1?

Class 8 Maths Algebraic Expressions and Identities Short Answer Type Questions

1. What must be added to $7z^3 – 11z^2 – 129$ to get $5z^2 + 7z – 92$?
2. If $(3x – 5y) = 10$ and $xy=5$, then find the value of $9x^2 + 25y^2$.
3. If $x + y = 9$ and $xy= 14$, find $x^2 – y^2$.
4. If $3x + 2y = 12$ and $xy = 6$, find the value of $9x^2 + 4y^2$.

Class 8 Maths Algebraic Expressions and Identities Long Answer Type Questions

1. Given $(x^2 + y^2) = 74$ and $xy = 35$, find the value of $x + y$ and $x – y$.
2. If $x + \frac{1}{x} = 4$, find the value of $\left(x^2 + \frac{1}{x^2}\right)$ and $\left(x^4 + \frac{1}{x^4}\right)$.
3. Using suitable identities evaluate the following:

(i) $(93)^2$
(ii) $(12.5)^2 – (7.5)^2$
(iii) 93×109