Ravi Maths Tuition Centre

Algebraic Expressions And Identities

8th Standard

Mathematics

74 x 1 = 74

1) Which of the following is an identity?

(a) $(b+c)=b^2+c^2$ (b) $b^2-c^2=(b+c)^2-4bc$ (c) $b^2-c^2=(b-c)^2$ (d) $(b+c)^2=b^2+2bc+c^2$

2) Which is the like term as $36\,abc^2$?

(a) $2 \times 18 \times a \times a \times b \times c \times$ (b) $3 \times 13 \times a \times b \times c \times c \times c$ (c) $3 \times 17 \times a \times c \times b \times c$

(d) $4 \times 5 \times b \times c \times c \times a \times a$

3) a (b + c) = ab + ac is

(a) commutative property (b) closure property (c) distributive property

(d) associative property

4) The product of a monomial and binomial is a

(a) binomial (b) monomial (c) trinomial (d) None of these

5) In a polynomial, the exponents of the variables are always

(a) integers (b) positive integers (c) non-negative integers

(d) non-positive integers

6) Which of the following is correct?

(a) $(a-b)^2=a^2+2ab-b^2$ (b) $(a-b)^2=a^2-2ab+b^2$ (c) $(a+b)^2=a^2+2ab-b^2$

(d) $(a-b)^2=a^2+2ab+b^2$

7) Which of the following is a binomial?

(a) 13xb+b (b) $6b^2+7a+2c$ (c) $45(b^2+a)$ (d) 13ax3bx5c

8) Sum of a - b + ab, b + c - bc and c - a - ac is

(a) ab-2c+ac-bc (b) 2c-ab-ac-bc (c) 2c+ab-ac-bc (d) 2c-ab+ac-bc

9) Area of a rectangle with length 5ab and breadth $13ac^2$ is

(a) $65a^2bc$ (b) $35a^2bc^2$ (c) $65a^2bc^2$ (d) $65abc^2$

10) Product of the monomials, $-15p$, $-13q^2$, pq is

(a) $-165p^2q^3$ (b) $195p^2q^3$ (c) $195p^3q^2$ (d) $-195p^3q^2$

11) Which of the following is the numerical coefficient of x^2-y^2

(a) 0 (b) 1 (c) x^2 (d) y^2

12) Which of the following is the numerical coefficient of - 5xy?

(a) 5 (b) -x (c) -5 (d) -y

13) What kind of polynomial is p q r?

(a) monomial (b) binomial (c) trimonial (d) none of these

14) The value of x^2-5 at $x = -1$ is

(a) -2 (b) -1 (c) -4 (d) -5

15) $a^2 - b^2$ is the product of

(a) (a + b) (a - b) (b) (a + b) (a + b) (c) (a - b) (a - b) (d) none of these

16) Which of the following is the value of $\left(x + \frac{1}{x}\right)^2$?

(a) $x^2 + \frac{1}{x^2}$ (b) $x^2 - \frac{1}{x^2}$ (c) $x^2 + \frac{1}{x^2} + 2$ (d) $x^2 + \frac{1}{x^2} + 2x$

17) Which of the following is obtained by subtracting x^2-y^2 from y^2-x^2?

(a) 2 (x^2 - y^2) (b) 2 (x^2+ y^2) (c) 2 (x^2+ y^2) (d) 2 (x^2- y^2)

18) Which of the following is the degree of x^3-x^2y^2-$8y^2$+2?

(a) 2 (b) 3 (c) 4 (d) 7

19) Which of the following is the value of $5x^{25}$-$3x^{32}$+2x-12 at x =1 ?

(a) 0 (b) 2 (c) 4 (d) none of these

20) What is the product of (x + a) and (x + b)?

(a) x^2 + (a - b) x + ab (b) x^2 + (a+b) x + ab (c) x^2 + (a + b) x - ab

(d) x^2 + (a + b) x + ab

21) The product of (x+1) and (x-1) is

(a) x^2+1 (b) x^2+2x+1 (c) x^2-1 (d) x^2-2x+1

22) The value of px^2-qy^2 at x=1 and y = -1

(a) p-q (b) p+q (c) pq (d) 0

23) Which of the following expression has value '0' at x = -1 and y = 2?

(a) 2y-$2x^2$ (b) $2y^2$-x (c) $2x^2$-2y (d) $2x^2$-y

24) Which of the following is the co-efficient of y in -5 xyz?

(a) -5xz (b) -5x (c) -5y (d) -5

25) The expression x + 3 is in

(a) one variable (b) two variables (c) no variable (d) none of these

26) The expression 4xy + 7 is in

(a) one variable (b) two variables (c) no variable (d) none of these

27) The expression x + y + z is in

(a) one variable (b) no variable (c) three variables (d) two variables

28) The value of 5x when x = 5 is

(a) 5 (b) 10 (c) 25 (d) -5

29) The value of x^2 - 2x + 1 when x = 1 is

(a) 1 (b) 2 (c) -2 (d) 0

30) The value of x^2 + y^2 when x = 1, y = 2 is

(a) 1 (b) 2 (c) 4 (d) 5

31) The value of x^2 - 2yx + y^2 when x = 1,y = 2 is

(a) 1 (b) -1 (c) 2 (d) -2

32) The value of x^2 - xy + y^2 when x = 0, y = 1 is

(a) 0 (b) -1 (c) 1 (d) none of these

33) Which of the following is a monomial?

(a) $4x^2$ (b) a + b (c) a+b+c (d) a+b+c+d.

34) Which of the following is a binomial?

(a) 3xy (b) 4l + 5m (c) 2x + 3y - 5 (d) 4a - 7ab + 3b + 12.

35) Which of the following is a trinomial?

(a) -7z (b) $z^2 - 4y^2$ (c) $x^2y - xy^2 + y^2$ (d) 12a - 9ab + 5b - 3.

36) How many terms are there In the expression $5xy^2$?

(a) 1 (b) 2 (c) 5 (d) 3

37) How many terms are there in the expression 5 - 3xy?

(a) 1 (b) 2 (c) 3 (d) 5

38) How many terms are there in the expression $7x^2 + 5x - 5$?

(a) 1 (b) 2 (c) 3 (d) 5

39) How many terms are there In the expression 4a - 7ab + 3b + 12?

(a) 1 (b) 2 (c) 3 (d) 4

40) How many terms are there in the expression 5xy + 9yz + 3zx + 5x - 4y ?

(a) 1 (b) 3 (c) 4 (d) 5

41) The coefficient in the term 7xy is

(a) 7 (b) 3 (c) 1 (d) 2

42) The coefficient in the term - 5x is

(a) 5 (b) -5 (c) 1 (d) 2

43) The coefficient in the term 20 is

(a) 1 (b) 2 (c) 10 (d) 20

44) The coefficient in the term - 20 is

(a) -1 (b) -2 (c) -10 (d) -20

45) The like terms of the following are

(a) x,3x (b) x, 2y (c) 2y, 6xy (d) 3x, 2y

46) The like terms of the following are

(a) $2x^2, 9x^2$ (b) y^2, xy (c) xy, $9x^2$ (d) $y^2, 9x^2$

47) The like terms of the following are

(a) ab, 9ba (b) ab, - 5b (c) -5b, 9ba (d) ab, - 3a

48) The number of like terms in $9x^3$, $16x^2y$, $- 8x^3$, $12xy^2$, $6x^3$ is

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

49) The number oflike terms in abc, - abc, - bca, acb, bac, $\frac{1}{2}$cab is

(a) 6 (b) 4 (c) 3 (d) 2

50) The number of like terms in $\frac{1}{4}a^2bc, -\frac{2}{3}bca^2, \frac{2}{5}ba^2c, -\frac{1}{2}cba^2 is$,

(a) 4 (b) 3 (c) 2 (d) 6

51) The coefficient of X^2 in $7pqrx^2$ is

(a) 7pqr (b) pqr (c) -7pqr (d) 7

52) The coefficient of xy in xy is

(a) 1 (b) -1 (c) 2 (d) 3

53) The coefficient of x^2y in $-15\ x^2y$ is

(a) 15 (b) -15 (c) 3 (d) 5

54) The coefficient of xy in $6x^2y^2$ is

(a) xy (b) 2xy (c) 3xy (d) 6xy

55) The coefficient of xy^2z in $-7x^2y^3z$ is

(a) -7xy (b) 7xy (c) -xy (d) xy.

56) The sum of 7x, 10x and 12x is

(a) 17x (b) 22x (c) 19x (d) 29x

57) The sum of 8pq and -17pq is

(a) pq (b) 9pq (c) -9pq (d) -pq.

58) The sum of $5x^2$, $-7x^2$, $8x^2$, $11x^2$ and $-9x^2$ is

(a) $2x^2$ (b) $4X^2$ (c) $6x^2$ (d) $8x^2$

59) The sum of $x^2 - y^2$, $y^2 - z^2$ and $z^2 - x^2$ is

(a) 0 (b) $3x^2$ (c) $3y^2$ (d) $3z^2$

60) What do you get when you subtract -3xy from 5xy?

(a) 3xy (b) 5xy (c) 8xy (d) xy.

61) The result of subtraction of 7x from 0 is

(a) 0 (b) 7x (c) -7x (d) x

62) The result of subtraction of 3x from -4x is

(a) -7x (b) 7x (c) x (d) -x

63) The product of 4mn and 0 is

(a) 0 (b) 1 (c) mn (d) 4mn

64) The product of 5x and 2y is

(a) XY (b) 2xy (c) 5xy (d) 10xy

65) The product of 7x and -12x is

(a) $84x^2$ (b) $-84x^2$ (c) x^2 (d) $-x^2$

66) The area of a rectangle whose length and breadth are 9y and $4y^2$ respectively is

(a) $4y^3$ (b) $9y^3$ (c) $36y^3$ (d) $13y^3$.

67) The area of a rectangle with length $2l^2m$ and breadth $3lm^2$ is

(a) $6l^3m^3$ (b) l^3m^3 (c) $2l^3m^3$ (d) $4l^3m^3$.

68) The volume of a cube of side 2a is

(a) $4a^2$ (b) 2a (c) $8a^3$ (d) 8

69) The volume of a cuboid of dimensions a, b, c is

(a) abc (b) $a^2b^2c^2$ (c) $a^3b^3c^3$ (d) none of these

70) The product of x^2, $-x^3$, $-x^4$ is

(a) x^9 (b) x^5 (c) x^7 (d) x^6

71) $(x - y)(x + y) + (y - z)(y + z) + (z - x)(z + x)$ is equal to

(a) 0 (b) $x^2+y^2+Z^2$ (c) xy + yz + zx (d) x + y + z.

72) $(a + b)^2$ is equal to

(a) $a^2 + b^2 - 2ab$ (b) $a^2 + b^2 + 2ab$ (c) a^2+b^2 (d) 2ab.

73) $(a - b)^2$ is equal to

(a) $a^2 + b^2 - 2ab$ (b) $a^2 + b^2 + 2ab$ (c) $a^2 + b^2$ (d) 2ab.

74) $a^2 - b^2$ is equal to

(a) 2ab (b) -2ab (c) (a + b) (a - b) (d) ab

17 x 1 = 17

75) Coefficient of y in the term $\frac{-13}{3}y$ is_____

76) The value of $(a + b)^2 - (a - b)^2$ is_____

77) $(35)^2 - (30)^2 = (35 + 30)$x_____=_____

78) The product of two polynomials is a_____

79) The number of terms in the expression $3a^2+5abxc$ is_____

80) Square of (3a+5b) is_____

81) The product of two terms with like signs is a_____term

82) The product of two terms with unlike signs is a_____term

83) The sum of $13pq^2$ and $-7q^2p$ is_____

84) On subtracting $-3a^2b^2$ from a^2b^2, we get_____

85) 7xy-5x has_____terms

86) The numerical factor of a term is called is_____

87) The coefficient of 7xy is_____

88) The coefficient of -5x is_____

89) An expression having only one term is called a_____

90) An expression having only two terms is called a_____

91) An expression having only three terms is called_____

10 x 1 = 10

92) The value of $(a + b)^2 + (a - b)^2$ is 4ab.

(a) True (b) False

93) An equation is true for all values of its variables.

(a) True (b) False

94) The coefficient of x^2yz in the term $-19x^2yz$ is -19.

(a) False (b) True

95) The value of p for $21^2 - 19^2 = 10$ p is 8.

(a) False (b) True

96) abc + bca + cba is a monomial

(a) False (b) True

97) The difference of the squares of two consecutive numbers is their sum

(a) False (b) True

98) Sum of $16a^2bc$, - $8b^2ac$ and $8a^2bc$ is $16a^2bc$.

(a) True (b) False

99) Like term as $15a^3b^2$ is $25a^3b^2c$.

(a) True (b) False

100) The product of (3 + a) (3 + b) is 9+(a+b)3+3ab

(a) True (b) False

101) The product of $24xyz^2$ and $3xy^2$ is $72x^2y^3z^2$. Match the Columns

(a) False (b) True

7 x 1 = 7

102) $(21x + 13y)^2$	(1) $441x^2 + 169y^2 - 546xy$
103) $(21x-13y)^2$	(2) $(a-b)^2$
104) $(21x - 13y)(21x + 13y)$	(3) $(a+b)^2$
105) $a^2 + 2ab + b^2$	(4) $x^2+(a+b)x+ab$
106) $a^2-2ab + b^2$	(5) $441x^2 + 169y^2 + 546xy$
107) (a+b) (a-b)	(6) (a+b) (a-b)
108) (x+a) (x+b)	(7) $441x^2 - 169y^2$

10 x 1 = 10

109) Are the terms xy and yx same or different?

110) Two monomials are multiplied. Is the product a monomial or binomial?

111) What do we call an equation that is true for every value of the variable in it?

112) What is the value of $x^2 + y^2$ - 10 at x = 0 and y = 0?

113) Find the value of at $x^2 + \frac{1}{x^2}$x = -1

114) Find the value of $x^2 - \frac{1}{5}$ at x= -1

115) Find the value of $x^2 + \frac{1}{x^2} + 2x$ at x =1

116) Why are 7x and 7y not like?

117) Why are 7x and 7xy not like?

118) Why are 7x and $5x^2$ not like?

240 x 2 = 480

119) Give five examples of expressions containing one variable and five examples of expressions containing two variables.

120) Show on the number line x

121) Show on the number line x-4

122) Show on the number line 2x+1

123) Show on the number line 3x-2

124) Identify the terms, their coefficients for each of the following expressions, $5xyz^2$- 3zy

125) Identify the terms, their coefficients for each of the following expressions, $1+ x + x^2$

126) Identify the terms, their coefficients for each of the following expressions,
$4x^2y^2 - 4x^2y^2z^2 + z^2$

127) Identify the terms, their coefficients for each of the following expressions,
3- pq+ qr- rp

128) Identify the terms, their coefficients for each of the following expressions,
$\frac{X}{2} + \frac{Y}{2} - XY$

129) Identify the terms, their coefficients for each of the following expressions,
0.3 a - 0.6ab + 0.5b

130) Classify the following polynomials as monomials, binomials, trinomials. Which polynomials do not fit in any of these three categories?
X + Y,1000,$X + X^2 + X^3 + X^4$,7 + Y + 5X, $2Y - 3Y^2$,$2Y - 3Y^2 + 4Y^3$,5X - 4Y + 3XY,4 $Z-15Z^2$,ab+bc+cd+da,pqr,$p^2q + pq^2$,2p + 2q

131) Add the following:
ab - bc, bc - ca, ca - ab

132) Add the following:
a-b + ab, b-c + bc,c-a + ac

133) Add the following $2p^2q^2 - 3pq + 4,5 + 7pq - 3p^2q^2$

134) Add the following $l^2 + m^2$,$m^2 + n^2$,$n^2 + l^2$,2lm + 2mn + 2nl

135) Find the product of the following pairs of monomials 4,7p

136) Find the product of the following pairs of monomials - 4p,7p

137) Find the product of the following pairs of monomials.
-4p,7-pq

138) Find the product of the following pairs of monomials $4p^3$,-3p

139) Find the product of the following pairs of monomials 4p,0

140) Find the areas of rectangles with the following pairs of monomials as their lengths and breadths respectively (p,q)

141) Find the areas of rectangles with the following pairs of monomials as their lengths and breadths respectively (10m,5n)

142) Find the areas of rectangles with the following pairs of monomials as their lengths and breadths respectively ($20x^2$,$5y^2$)

143) Find the areas of rectangles with the following pairs of monomials as their lengths and breadths respectively ($4x$,$3x^2$)

144) Find the areas of rectangles with the following pairs of monomials as their lengths and breadths respectively (3mn,4np)

145) Obtain the volume of rectangular boxes with the following length, breadth and height, respectively 5a, 3 a^2, $7a^4$

146) Obtain the volume of rectangular boxes with the following length, breadth and height, respectively 2p, 4q, 8r

147) Obtain the volume of rectangular boxes with the following length, breadth and height, respectively xy, $2x^2y$, $2xy^2$

148) Obtain the volume of rectangular boxes with the following length, breadth and height, respectively a, 2b, 3c

149) Obtain the product of xy, yz, zx

150) Obtain the product of a, -a^2,a^3

151) Obtain the product of 2, 4y, $8y^2$, $16y^3$

152) Obtain the product of a, 2b, 3c, 6abc

153) Obtain the product of m, - mn,mnp

154) Find the product:
$2x(3x + 5xy)$

155) Find the product:
a^2 (2ab- 5c)

156) Find the product of $(4p^2 + 5p + 7) \times 3p$.

157) Carry out the multiplication of the expressions in each of the following pair 4p, q + r

158) Carry out the multiplication of the expressions in each of the following pairs ab,a -b

159) Carry out the multiplication of the expressions in each of the following pairs a+b, $7a^2b^2$

160) Carry out the multiplication of the expressions in each of the following pairs a^2- 9, 4a

161) Carry out the multiplication of the expressions in each of the following pair (pq + qr + rp)$\times$0

162) Find the product.$(a^2) \times (2a^{22}) \times (4a^{26})$

163) Find the product: $\left(\frac{2}{3}xy\right) \times \left(\frac{-9}{10}x^2y^2\right)$

164) Find the product: $\left(-\frac{10}{3}pq^3\right) \times \left(\frac{6}{5}p^3q\right)$

165) Find the product: $x \times x^2 \times x^3 \times x^4$

166) Simplify 3x (4x- 5) + 3 and find its values for x = 3

167) Simplify 3x (4x- 5) + 3 and find its values for $x = \frac{1}{2}$

168) Multiply these binomial (2x+ 5) and (4x- 3)

169) Multiply these binomial (y- 8)and (3y- 4)

170) Multiply these binomial (2.51- 0.5m) and (2.51+ 0.5m)

171) Multiply these binomials:(a + 3b) and (x+ 5)

172) Multiply these binomials:$(2pq + 3q^2)$ and $(3pq - 2q^2)$

173) Multiply these binomials: $\left(\frac{3}{4}a^2 + 3b^2\right) and 4\left(a^2 - \frac{2}{3}b^2\right)$

174) Find the product:(5 - 2x) (3 + x)

175) Find the product:(x + 7y) (7x- y)

176) Find the product:$(a^2 + b)(a + b^2)$

177) Find the product:$(p^2 - q^2)(2p + q)$

178) Simplify:$(x^2 - 5)$ (x+ 5) + 25

179) Simplify:$(a^2 + 5)$ $(b^3 + 3)$+ 5

180) Simplify:$(t + s^2)$ $(t^2 - s)$

181) Simplify:(a+ b)(c- d)+ (a- b) (c+ d)+ 2(ac+ bd)

182) Simplify:(x+ y)(2x+ y) + (x+ 2y)(x- y)

183) Simplify:(x + y) $(x^2 - xy + y^2)$

184) Simplify:(1.5x- 4y) (1.5x+ 4y+ 3) - 4.5x + 12y

185) Simplify:(a + b+ c)(a + b- c)

186) Put -b in place of b in identity I. Do you get identity II?

187) Verify identity IV, for a = 2, b = 3, x = 5

188) Consider the special case of identity IV with a = b what do you get? Is it related to identity I?

189) Consider the special case of identity IV with a = - c and b = - c. What do you get? Is it related to identity II?

190) Consider the special case of identity IV with b = - a. What do you get? Is it related to identity III?

191) Use a suitable identity to get each of the following product (x+ 3) (x+ 3)

192) Use a suitable identity to get each of the following product (2y+ 5) (2y+ 5)

193) Use a suitable identity to get each of the following product(2a-7) (2a-7)

194) Use a suitable identity to get each of the following product (1.1m- 0.4) (1.1m+ 0.4)

195) Use the identity $(x + a)(x + b) = x^2 + (a + b)x + ab$ to find the following products. (x+ 3) (x+ 7)

196) Use the identity $(x + a)(x + b) = x^2 + (a + b)x + ab$ to find the following products. (4x + 5) (4x + 1)

197) Find the following squares by using the identities.$(b - 7)^2$

198) Find the following squares by using the identities.$(xy+ 3z)^2$

199) Find the following squares by using the identities$(6x^2 - 5y)^2$

200) Find the following squares by using the identities $\left(\frac{2}{3}m + \frac{3}{2}n\right)^2$

201) Find the following squares by using the identities:$(0.4p - 0.5q)^2$

202) Find the following squares by using the identities:$(2xy + 5y)^2$

203) Using identities, evaluate: 71^2

204) Using identities, evaluate: 99^2

205) Using identities, evaluate: 102^2

206) Using identities, evaluate: 998^2

207) Using identities, evaluate: 5.2^2

208) Using identities, evaluate: 297×303

209) Using identities, evaluate: 78×82

210) Using identities, evaluate: 8.9^2

211) Using identities, evaluate: 1.05x 9.5

212) Using $a^2 - b^2 = (a + b)(a - b)$, find $51^2 - 49^2$

213) Using $a^2 - b^2 = (a + b)(a - b)$, find $(1.02)^2 - (0.98)^2$

214) Using $a^2 - b^2 = (a + b)(a - b)$, find $153^2 - 147^2$

215) Using $a^2 - b^2 = (a + b)(a - b)$, find $12.1^2 - 7.9^2$

216) Using $(x + a)(x + b) = x^2 + (a + b)x + ab$; find 103 x 104

217) Using $(x + a)(x + b) = x^2 + (a + b)x + ab$; find 5.1 x 5.2

218) Using $(x + a)(x + b) = x^2 + (a + b)x + ab$; find 103×98

219) Using $(x + a)(x + b) = x^2 + (a + b)x + ab$; find 9.7×9.8

220) Simplify $a(a^2 + a + 1) + 5$ and find its value for a = 0

221) Simplify $a(a^2 + a + 1) + 5$ and find its value for a = 1

222) Simplify $a(a^2 + a + 1) + 5$ and find its value for a = -1

223) Use a suitable identity to get each of the following product $(a^2 + b^2)(-a^2 + b^2)$

224) Use a suitable identity to get each of the following product (6x - 7)(6x + 7)

225) Use a suitable identity to get each of the following product (-a + c)(-a + c)

226) Use a suitable identity to get each of the following product $\left(\frac{x}{2}+\frac{3y}{4}\right)\left(\frac{x}{2}+\frac{3y}{4}\right)$

227) Use the identity (x + a) (x + b) = x^2 + (a + b) x + ab to find the following product (4x + 5)(4x - 1)

228) Use the identity (x + a) (x + b) = x^2 + (a + b) x + ab to find the following product (2x + 5y)(2x + 3y)

229) Use the identity (x + a) (x + b) = x^2 + (a + b) x + ab to find the following product ($2a^2$ + 9)($2a^2$ + 5)

230) Use the identity (x + a) (x + b) = x^2 + (a + b) x + ab to find the following product (xyz - 4)(xyz - 2)

231) Simplify (a^2-b^2)^2

232) Subtract: $5x^2$ - $44y^2$ + 6y-3 from $7x^2$ - 4xy + $8y^2$ + 5x - 3y

233) Add:7xy + 5yz - 3zx; 4yz + 9zx - 4y and -3xz +5x-2xy

234) Simplify the expressions and evaluate them as directed x(x-3) + 2 for x =1

235) Simplify the expressions and evaluate them as directed 3y(2y - 7) - 3(y - 4) - 63 for y = -2

236) Add 5m(3 - m) and $6m^2$ - 13m

237) Add 4y($3y^2$+ 5y - 7) and 2(y^3 - $4y^2$ + 5)

238) Subtract: 3pq(p - q) from 2pq(p + q)

239) Using the Identity (I), find (2x + 3y)^2

240) Using the Identity (I), find (103)^2

241) Using the identity (a - b)^2 = a^2 - 2ab + b^2, find (4p-3q)^2

242) Using the identity (a - b)^2 = a^2 - 2ab + b^2, find (4.9)^2

243) Using suitable identity, find $\left(\frac{3}{2}m+\frac{2}{3}n\right)\left(\frac{3}{2}m-\frac{2}{3}n\right)$

244) Using suitable identity, find 983^2 - 17^2

245) Using suitable identity, find 194 $\times$206

246) Using the identity (x + a)(x + b) = x^2+ (a + b)x + ab find 501$\times$502

247) Using the identity (x + a)(x + b) = x^2+ (a + b)x + ab find 95$\times$103

248) Find the product of (x - 4) and (2x + 3)

249) Multiply: (x - y) and (3x + 5y)

250) Multiply (a + 7) and (b - 5)

251) Multiply (a^2 + $2b^2$) and (5a - 3b)

252) Simplify (a + b)(2a - 3b + c) - (2a - 3b)c

253) Use a suitable identity to get each of the following products:
$(3a-\frac{1}{2})(3a-\frac{1}{2})$

254) Show on the number line z - 3.

255) Subtract 13a -18ab+ 3b+16 from 22a+ 30ab+ 6b+ 8.

256) Add $2p^2q$+ 3pq+ $4q^2p$ to $5p^2q$+ pq-q^2p.

257) Add $7x^2$ - 4x+ 5, -$3X^2$ + 2x- 1and $5x^2$ - x+ 9.

258) Add $2p^2q$, 3pq, -8pq and $5p^2q$

259) Subtract $6x^2$ - 4xy + $5y^2$ from $3x^2$ - 4xy + $15y^2$.

260) Complete the table for area of a rectangle with given length and breadth

Length	Breadth	Area
13X	15Y	.....
9Y	$13Y^2$	.....

261) Find 4x x 5y x 7z.

262) Simplify the following:
ax a^5x a^7

263) Simplify the following:
xy^2xx

264) Simplify the following:
xyz x x^2y

265) Simplify the following:
3xy x $4x^2$ yz

266) Find the areas of squares with the following monomials as their sides
xy

267) Find the areas of squares with the following monomials as their sides
2a

268) Compute the volume of rectangular boxes with the following length, breadth and height, respectively.
$6a^3$, $4a^2$,2a

269) Compute the volume of rectangular boxes with the following length, breadth and height, respectively
8a,4a,2a

270) Find the value of the product
$\left(-2a^2b\right) \times \left(-\frac{2}{3}ab\right) \times 3 for\ a = 2 and\ b = \frac{1}{2}$

271) Express the following product as a monomial $\left(a^4\right) \times \left(2a^3\right) \times \left(\frac{1}{5}a^2\right) \times (-5a)$

272) Multiply $-\frac{2}{3}a^3b\ by \frac{5}{4}ab^2$ and verify your result for a=2 and b=2

273) Find the product 2x (3x + 5y)

274) Find the product:a^2 (2ab - 5c)

275) Multiply the product:3x (13x+ 12z- 2y)

276) Multiply the product:6y (12y+ 13yz- 3x)

277) Multiply the following algebraic expressions.
abc, (bc+ca)

278) Multiply the following algebraic expressions.
(a^2 - b^2), (a^2 + b^2)

279) Simplify the following:
$3a^2(a-a^2)-2a^2(2a+a^3)-3(2a^3 -a^4)$

280) Simplify the following:
$a^3b(a^2-a^3)+ab(a^3 -a^4)$

281) Find the product -2a(ab + b^2) and find its value for a =2, b = 4.

282) Multiply $-\frac{5}{3}a^3b^4$ by(3a -b)and verify the answer for a = 1 and b=3

283) Simplify each of the following expressions.
$xy^2(x^2 - x+1) - xy(x^3 - x^2 - x) - y(x^4 - x^3 - x^2)$

284) Multiply:(x+ 2y)and (3x- 5x)

285) Multiply:(x+ 2) and (2x+ 13)

286) Simplify (a + 2b) (2a - 5b + 6c) - (2a + 3b) c

287) Multiply the following polynomials.
$\left(\frac{3}{4}x - \frac{4}{3}y\right), \left(\frac{2}{3}x + \frac{3}{2}y\right)$

288) Multiply the following polynomials.
(2x - 2y - 3), (x + y + 5)

289) Multiply the following polynomials.
$x^2y^2z^2$,(xy - yz + zx)

290) Find the value of the following products.
(2p + q)(p - 2q) at p =-1,q =1

291) Find the value of the following products.
$(l^2$ - m)$(m^2$ -I) at l = 0, m= 1

292) Compute the product of $\left(2x + \frac{1}{3}y\right)$ *and* $\left(\frac{1}{2}x + 3y\right)$ and verify the result for x = 1,y = 1.

293) Simplify:
(3x + 4) (x - 2) + (2x + 1) (x - 1)

294) Simplify : $\frac{1}{8}\left(2x^2 + 4y^2\right)\left(2x^2 - 4y^2\right)$

295) Multiply:$(5x^2$ - 3x + 2) by $(x^2$ + 2x - 6)

296) Multiply:$(1+ x + x^2 + x^3)$by (x -1).

297) Use the identity (x + a) (x + b) = x^2 + (a + b)x + ab to find the following products.
(4x- 5) (4x- 1)

298) Using suitable identities, evaluate the following:$(39)^2$

299) Using suitable identities, evaluate the following:$(99)^2$

300) Using suitable identities, evaluate the following:$(101)^2$

301) Using suitable identities, evaluate the following:$(100)^2$-$(99)^2$

302) If x+ y= 5and x - y = 3, then find the value of xy.

303) If x^2 + y^2 =25 and xy = 8, then find the value of x-y

304) If x^2 + y^2 =25 and xy = 8, then find the value of x+y

305) If x - y= 3 and xy = 8, then find the value of x^2 + y^2.

306) if $x^2 + \frac{1}{x^2} = 23$ then find the value of $x + \frac{1}{x}$

307) if $x^2 + \frac{1}{x^2} = 23$ then find the value of $x - \frac{1}{x}$

308) if $x + \frac{1}{3} = 3$ then find the value of $x - \frac{1}{x}$

309) Add 17a^2bc, 13abc^2 and 5ab^2c.

310) Subtract (3a^2bc) from (-13a^2bc + 5).

311) Multiply (3a + b + c) with (3a - b).

312) Add 3a (a - b + c) and 2b (a - b + c).

313) Subtract 7p(3q + 7p)from8p(2p - 7q).

314) Simplify$(2a + 3b)^2$.

315) Multiply 14b, 3a^2bc and 16c

316) Using suitable identity, evaluate the following:31^2

317) Using suitable identity, evaluate the following:49^2

318) Using suitable identity, evaluate the following:21^2-11^2

319) Add the following:
$7a^2bc$, $-3abc^2$, $3a^2bc$, $2abc^2$

320) Add the following:
$9ax$, $3by - cz$, $-5by + ax + 3cz$

321) Subtract the following:
$5a^2b^2c^2$ from $-17a^2b^2c^2$

322) Subtract the following:
$2ab^2c^2+4a^2b^2c-5a^2bc^2$ from $-10a^2b^2c+4ab^2c^2+2a^2bc^2$

323) Multiply the following:
$15\ xy^2$, $17\ yz^2$

324) Multiply the following:$(p + 6)(q - 7)$

325) Simplify the following:
$(3x + 2y)^2 - (3x - 2y)^2$

326) Simplify the following:
$(1.5p + 1.2q)^2 - (1.5p - 1.2q)^2$

327) Expand the following:
$(0.9p-0.4q)^2$

328) Expand the following:
$\left(\frac{2x}{3}+\frac{2}{3}\right)\left(\frac{2x}{3}+\frac{2a}{3}\right)$

329) Add: $9xy - 3yz + 2zx$; $2xz + 9xy - 4y$ and $-2xz + 5x + 3xy$.

330) Subtract $6x^2 - 5y^2 + 7y - 4$ from $8x^2- 5xy + 9y^2+ 6x - 4y$

331) Find the product of 2x, 5xy and 7x

332) Use a suitable identity to get the product $(-a + c)(-a + c)$

333) Add: $a + b + ab$; $b - c + bc$ and $c + a + ac$

334) Using a suitable identity to get the product $\left(3x-\frac{1}{3}\right)\left(3x-\frac{1}{3}\right)$

335) Classify the following into monomials, binomials, and trinomials a - b, -9, 10y,$61+ 5m$, $5xy^2$,$a-b+c$,$a+5$,x^2y+xy^2-xy,$-3xy$,$7-3xyz$

336) Add $7x^{2-}4x+5$ and $9x-10$

337) Find the product of 5x and (-3y)

338) Find the product of 5x and (-3y) 5x and (-4xyz)

339) Find the product of 2x, Sy and 7z

340) Find the product of 4xy, $5x^2y^2$ and 6^33y^3

341) Multiply (-3x) and (-5y + 2)

342) Multiply 5xy and $(y^2+ 3)$

343) Find the product of (3a + 4b) and (2a + 3b)

344) Simplify $(a + 7)(a^2 + 3a + 5)$

345) Add:$8xy - 2xz - 3yz$; $2zx - 4y + 9xy$; $4xy + 5x + 2zx$

346) Subtract $5x^2\ 6y^2+ 7y - 4$ from $7x^2- 5xy + 10y^2+ 6x - 4y$

347) Write the terms and co-efficients of $3 - rp + pr - pq$

348) Write the terms and co-efficients of $1 + x + x^2$

349) Find the product of 7x, -5xy and 2z.

350) Find the area of a rectangle whose length and breadth are '4mn' and '3np' respectively

351) Find the volume of a rectangular box whose length, breadth and height are 2xy, x^2y and $2xy^2$ respectively

352) Simplify x(2x -1) + 5 and find its value at x = -2

353) Simplify (a + b + c)(a + b - c)

354) Using the identities, find the following squares $(xy+3p)^2$

355) Using the identities, find the following squares $\left(\frac{3}{2}a + \frac{2}{3}b\right)^2$

356) Using identities, evaluate 9.5×10.05

357) Using identities, evaluate $(102)^2$

358) Using identities, evaluate $(99)^2$

77 x 3 = 231

359) Identify the coefficient of each term in the expression $x^2y^2 - 10x^2y + 5xy^2 - 20$.

360) Classify the following polynomials as monomials, binomials and trinomials.
$-z+5$, $x+y+z$, $y+z+100$, ab-ac, 17

361) Construct
(a) 3 binomials with only x as a variable,
(b) 3 binomials with x and y as variables.
(c) 3 monomials with x and y as variables.
(d) 2 polynomials with 4 or more terms

362) Write two like terms of the following
7xy

363) Write two like terms of the following
$4\ mn^2$

364) Write two like terms of the following
2l

365) Subtract 4a - 7ab + 3b + 12 from $12a-9ab+5b-3$.

366) Can you think of two more such situations, where we may need to multiply algebraic expressions?

367) Find 4x x 5y x 7z First, find 4x x 5y and multiply it by 7z; or first find 5y x 7z and multiply it by 4x. Is the result same? What do you observe? Does the order in which you carry out the multiplication matter?

368) Complete the table of products.

First monomial → / **Second monomial ↓**	**2x**	**-5y**	**$3x^2$**	**-4xy**	**$7x^2y$**	**$-9x^2y^2$**
2x	$4x^2$		...	...	...	...
-5y	...	...	$-15x^2y$	..	...	...
$3x^2$	...	...	...	...	...	...
-4xy	...	...	...	...	...	...
$7x^2y$	...	...	...	...	...	...
$-9x^2y^2$	...	...	...	...	...	...

369) Complete the table.

	First expression	Second expression	Product
i	a	b+c+d	.....
ii	x+y-5	5xy	.....
iii	p	$6p^2 - 7p + 5$	.....
iv	$4p^2q^2$	p^2-q^2	.....
v	a+b+c	abc	.....

370) Add p(p - q), q(q - r) and r(r - p)

371) Add 2x (z- x- y) and 2y (z- y- x).

372) Subtract 3l (l- 4m + 5n) from 41 (10n- 3m + 21)

373) Subtract 3a (a + b + c) - 2b (a - b + c) from 4c (- a+ b + c).

374) Simplify:$(2x + 5)^2$-$(2x - 5)^2$

375) Simplify:$(7m - 8n)^2 + (7m + 8n)^2$

376) Simplify:$(4m + 5n)^2 + (5m+ 4n)^2$

377) Simplify:$(2.5p- 1.5q)^2 - (1.5p- 2.5q)^2$

378) Simplify:$(ab + bc)^2 - 2ab^2c$

379) Simplify:$(m^2 - n^2m)^2+ 2m^3n^2$

380) Show that $(3x+ 7)^2 - 84x= (3x- 7)^2$

381) Show that $(9p- 5q)^2 + 180pq= (9p+ 5q)^2$

382) Subtract 3xy+ 5yz- 7zx from 5xy- 2yz - 2zx + 10xyz.

383) Subtract $4p^2q$-3pq + $5pq^2$ - 8p+ 7q- 10 from 18 - 3p - 11q+ 5pq- $2pq^2$ + $5p^2q$

384) Show that $\left(\frac{4}{3}m - \frac{3}{2}n\right)^2 + 2nm = \frac{16}{9}m^2 + \frac{9}{16}n^2$

385) Show that $(4pq + 3q)^2 - (4pq - 3q)^2 = 48pq^2$

386) Show that (a - b)(a + b) + (b - c)(b + c) + (c - a)(c + a) = 0

387) Complete the table for area of a rectangle with given length and breadth

	Length	Breadth	Area
(i)	3x	5y	___
(ii)	9y	$4y^2$	___
(iii)	4ab	5bc	___
(iv)	$2l^2m$	3lm	___

388) Find the volume of each rectangular box with given length, breadth and height

	Length	Breadth	Height
(i)	2ax	3by	5cz
(ii)	m^2n	n^2p	p^2m
(iii)	2q	$4q^2$	$8q^3$

389) Subtract 1+ a^2 + b^2 from the sum of 1- a^2-b^2 and a^2-b^2

390) Subtract the sum of 3a - 4b +c and 1- 2a + b from the sum of 3b+c + b and a -2b + 3

391) Using suitable identities, solve the following:
(a) $(110)^2$ (b) $(89)^2$ (c) $(110)^2$-$(89)^2$

392) Show that a^2 + 3a+ 2= 132 is not true for a=-5 and for a= 0.

393) Simplify.$(a^2$-$b^2)^2$

394) What must be added to each of the following expressions to make it a whole square?
$4x^2$+4x

395) What must be added to each of the following expressions to make it a whole square?
$9x^2$-12x+3

396) Simplify $(3x + 2y)^2 + (3x- 2y)^2$.

397) Add $5x^2$-13xy+$4y^2$-9 and $7y^2$+5xy-$12x^2$+13

398) Subtract -3p2+3pq+3px from 3p(-p-a-r)

399) Verify that $(3x+5y)^2-30xy=9x^2+25y^2$

400) Verify that$(11pq+4q)^2-(11pq-4q)^2=176pq^2$

401) Find the value of $a^2+\frac{1}{a^2}$ if $\left(a+\frac{1}{a}\right)^2=49$ using a suitable identity.

402) Add the following:$7a^2bc,-13abc^2,13a^2bc,2abc^2$

403) Add the following:
$21a^2bc,-45abc^2,18a^2bc,21abc^2$

404) Subtract the following:
$3t^4-4t^3+2t^2-6t+6$ from $-4t^4+8t^3-4t^2-2t+11$

405) Subtract the following:
$2ab+5bc-7ac$ from $5ab-2ac+10abc$

406) Multiply the following:
$-7pq^2r^3,-26p^3qr^2$

407) Multiply the following:
$-5abc^2,11ab^2,13a^2bc$

408) Solve $\left(\frac{3}{4}x+\frac{4}{3}y\right)\times\left(\frac{3}{4}x+\frac{3}{4}z\right)$

409) Find the expansion of the following using suitable identity.
$(3x+7y)(3x-7y)$

410) Find the expansion of the following using suitable identity.
$\left(\frac{4x}{5},\frac{y}{4}\right)\left(\frac{4x}{5}+\frac{3y}{4}\right)$

411) if $p+q=12$ and $pq=22$,then find p^2+q^2

412) If $a+b=25$ and $a^2+b^2=225$,then find ab

413) Solve the following using identities.47×53

414) Solve the following using identities.52×53

415) Solve the following using identities.105×95

416) Solve the following using identities.104×97

417) Solve the following using identities. $(35.4)^2-(14.6)^2$

418) Express each of the following products as a monomial and verify the result for $x=-1,y=1.(-x^2y^3)\times(xy)\times(x^3y^2)$

419) Express each of the following products as a monomial and verify the result for $x=-1,y=1\left(\frac{1}{2}xy\right)\times\left(\frac{1}{3}x^3y\right)\times(12xy)$

420) Find the product of $\frac{3}{7}xy^3$and 2x-y.verify the result for $x=\frac{1}{2}$ and y=-2.

421) Simplify each of the following expressions:$8x^2$ -2x (x -1) + 3x (2x +1)

422) Simplify each of the following expressions:$x(x^2-y^3)-y(x^3-y^4)+x(x^4-y^5)$

423) Multiply(2x-5y) by(2x -5y).

424) Simplify the following:$\{-2x+(-y)\}\{-x^2-(-y)^2\}$

425) Simplify the following:$\left(\frac{x}{5}-\frac{1}{2}\right)\left(\frac{1}{2}+\frac{x}{5}\right)$

426) Multiply (x - xy - x^2y) by (y - xy - y^2x).

427) Evaluate the following using identites.51x49

428) Evaluate the following using identities.17^2-13^2

429) Write down the square of each of the following expressions.(5x-1)

430) Write down the square of each of the following expressions. $\left(x+\frac{y}{2}\right)$

431) Simplify: 2x(x -1) + 5 and find its value at x = -1

432) Verify the identity (x + a)(x + b) =.x^2+ (a + b)x + ab for a = 2, b = 3 and x = 4,

433) The length and breadth of a rectangle are $3x^2$- 2 and 2x + 5 respectively. Find its area

434) Find the volume of cuboid whose dimensions are (x^2-1); (2x + 1) and (x - 1)

435) Find the product of 2x, $3ax^2$ and $-5pqx^3$

23 x 5 = 115

436) Write the coefficients of xy in the following polynomials.
(i) $4yx^2$
(ii) $2X^2$+xy

437) Write down the like terms in the given polynomial $2ca^2 + \frac{1}{2}bc^2a + \frac{2}{3}bca^2 + 3a^2bc$

438) Classify the following as monomials, binomials and trinomials
$2a^2cb + \frac{1}{2}cba^2, b + 1, a^2b + b^2c + c^2a$

439) Which of the following polynomials is/are a monomial?
$\frac{1}{2}ac^2b + bac^2 + \frac{1}{2}c^2ab, a + 1, abc$

440) Simplify each of the following expressions.
$\frac{1}{2}a^2\left(a^2 - 2\right) + \frac{1}{4}a^2\left(2a + a^2\right) - \frac{3}{8}a\left(a + 1\right)$

441) Evaluate using suitable identities.
(i) $(48)^2$
(ii) 181^2-19^2
(iii) 497 x 505
(iv) 2.07 x 1.93

442) Find the product of the following binomials.(7x-6y)(7x-6y)

443) Find the product of the following binomials.
$\left(\frac{x-y}{2}\right)\left(\frac{x+y}{2}\right)$

444) If 2x + 3y =5 and xy =1, then find the value of $4x^2 + 9y^2$.

445) Using the formula for squaring a binomial, evaluate the following.$(199)^2$

446) Using the formula for squaring a binomial, evaluate the following.$(150)^2$

447) Make the following expressions a perfect square $25x^2$ + 30x + 9

448) Make the following expressions a perfect square $4x^2$ +20x +25

449) Find the value of the following products
(i) (2m - n)(m - 2n) at m = 1and n =-1
(ii) (a+2)(b-2) at a=0 and b=-2

450) What must be added to x^2+4x+1to make it a whole square?

451) Evaluate using suitable identities
(i) $(48)^2$
(ii) 181^2-19^2
(iii) 497x 505
(iv) 2.07x1.93

452) By using suitable identity, evaluate $x^2 + \frac{1}{x^2}, if\ x + \frac{1}{x} = 5$

453) Find the value of y, if 10000y=$(9982)^2$-$(18)^2$

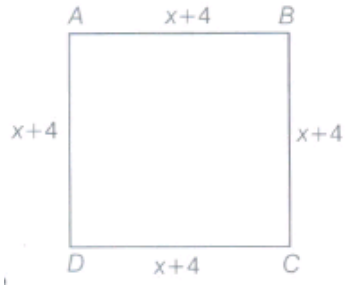
454) Using suitable identities evaluate the following:
(a)$(52)^2$
(b)$(1005)^2$
(c)$(9.9)^2$
(d)10.1×10.2

455) A garden is in the shape of a square as shown adjacent. The area of the square ABCD is 289 m^2 with each side (x + 4) m, Based on above information, answer the following questions:

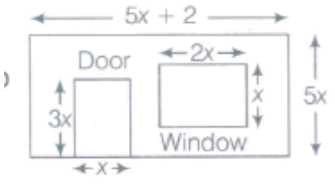
(a) Find the value of x.

(b) Find the side of the square-shaped garden.

(c) What is the need of the garden?



456) The alongside figure shows the dimensions of a wall having a window and a door of a room. Write an algebraic expression for the area of the wall to be painted.



457) The value of p for $51^2 - 49^2 = 100p$ is 2, Is it true or false

458) One day, Sahil went to playa cricket tournament (organised in a sports complex) along with his two friends Rahul and Sunil. Someone stole Sahil's bicycle but Rahul and Sunil helped him to buy a new one bicycle contributing rs(2x +80) and rs (8x + 20), respectively, If the bicycle costs rs. 2100,

(a) what were the amount given by Rahul and Sunil to Sahil?

(b) what are the values depicted by Rahul and Sunil here?

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