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**REVISION WORKSHEET**

**GRADE-VIII**

**MATHEMATICS**

**ALGEBRIC EXPRESSIONS AND IDENTITIES**

**SOLVE THE FOLLOWING:**

**1.** Add the following:

 a) -3a2b2, –52 a2b2, 4a2b2, 23 a2b2

  b) 8x2 + 7xy – 6y2, 4x2 – 3xy + 2y2 and -4x2 + xy – y2

**2.** Subtract the following:

 a) 3x2 – 5x + 7 from 5x2 – 7x + 9

 b)  (4x + 5) from (-3x + 7)

3. Multiply the following expressions:
 a) 3xy2 × (-5x2y)
 b) 12 x2yz × 23 xy2z × 15 x2yz

 c) (3x2 + 5y2) x (5x2 – 3y2)

4. Simplify:

 i) (x2- y2)2 + 4x2y2
 ii) (p + q)2- (p - q)2 + p2q2
 iii) (2m - 8n)2+ (2m + 8n)2
 iv) (4m + 5n)2+ (5m + 4n)2 + (4m + 5n) (4m -5n)
 v) (.5p - 1.5q)2- (.5p - 1.5q)2 +p2q2
 vi) (ab - bc)2+2ab²c
 vii) (m2- n2m)2+ 2m2n2

 ix) 2x2(x + 2) – 3x (x2 – 3) – 5x(x + 5)

 x) **x2(x – 3y2) – xy(y2 – 2xy) – x(y3 – 5x2)**

 **xi) Simplify 7x2(3x – 9) + 3 and find its values for x = 4 and x=6**

**5.** Use a suitable identity to get each of the following products.
 a) (p - 11) (p + 11)
 b) (2y + 5) (2y - 5)
c) (12a - 9) (12a +9)
 (d) (2a-$\frac{1}{2} $) (2a-$\frac{1 }{2}$)
 (e) (1.1m - 0.4) (1.1m + 0.4)
 (f) (a2+ b2) (- a2+ b2)
 (g) (6x - 7) (6x + 7)
 (h) (- a/2 + c/2) (- a/2 + c/2)
 (i) [(p/8)+(3q/4)] [(p/8)+(3q/4)]
 (j) (3a + 9b) (3a - 9b)
 (k) 2(a - 9)2
 (l) 5(xy - 3z)2
 (m) (6x+ 5y)2

6. Show that LHS = RHS for the below equations.

 a) ( 3x + 7 )² – 84x = ( 3x – 7 )²

 b) ( 9p – 5q )² + 180pq = ( 9p + 5q )²

 c) ( 4pq + 3q )² – ( 4pq – 3q )² = 48pq²

 d) (a – b) (a + b) + (b – c) (b + c) + (c – a) (c + a) = 0

**FACTORIZATION**

**1. Factorize by using identity.**

 **i) a2 – 64**

 **ii) 20a2 – 45b2**

 **iii) 32x2y2 – 8**

 **iv) x2 – 2xy + y2 – z2**

 **v) 49x2 – 1**

**vi)**  a⁴ – 2a²b² + b⁴

vii) 25m² + 30m + 9

**2.  Find the common factors of the following.**

 **i) 6 xyz, 24 xy2 and 12 x2y**

 **ii) 3x2 y3, 10x3y2 and 6x2 y2 z**

**iii)** 6abc, 24ab², 12a²b

iv)10pq, 20qr, 30rp

v) 3x²y³, 10x³y², 6x²y²z

**3.** Factorize the following expressions by splitting middle term.

a) a2 +14a+48

(b) m2 – 10m – 56

c) q² – 10q + 21

d) $x^{2}+ 15x+26$

e) $x^{2}+ 9x+20$

f) $x^{2}+4x-77$

g) $p^{2}- 13p-30$

$$h) a^{2}- 16a-80$$

4. Factorize the following.

a) 54m3n + 81m4n2
 b) 15x2y3z + 25x3y2z + 35x2y2z2

 c)  6p(p – 3) + 1 (p – 3)

 d) (x + y)2 – 4xy – 9z2
 e) 25x2 – 4y2 + 28yz – 49z2

 f) 39n3 (50n2 – 98) ÷ 26n2 (5n – 7)
 g) 44(p4 – 5p3 – 24p2) ÷ 11p (p – 8)