

Assignments for Factorization

Question 1

Factor the given expressions using identity:

$$(x+y)^2 = x^2 + y^2 + 2xy$$

$$(x-y)^2 = x^2 + y^2 - 2xy$$

$$x^2 - y^2 = (x-y)(x+y)$$

(i) $p^2 + 6p + 9$

(ii) $4z^2 - 4z + 1$

(iii) $4p^4 + 9p^4 + 12p^2q^2$

(iv) $(a^4 - 8a^2b^2 + 16b^4) - 81$

(v) $625 - x^2 - 2xy - y^2$

Question 2

Divide as directed.

(i) $5(x + 1)(2x + 5) \div (2x + 5)$

(ii) $39x(x + 5)(y - 2) \div 13x(y - 2)$

(iii) $12pq(p + q)(q + r)(r + p) \div 6pq(q + r)(r + p)$

(iv) $60(y - 4)(y^2 + 5y + 3) \div 5(y - 4)$

(v) $x(x + 1)(x - 2)(x + 3) \div x(x - 2)$

Question 3

Factorize the expressions.

(i) $px^2 + qx$

(ii) $7x^2 + 21y^2$

(iii) $2x^3 + 2xy^2 + 2xz^2$

(iv) $ap^2 + bq^2 + bq^2 + aq^2$

(v) $nm + n^2 + m + n$

(vi) $y(y - z) + 16(y - z)$

(vii) $5y^2 - 20y - 8z + 2yz$

(viii) $10xy + 4x + 5y + 2$

(ix) $6xy - 4y + 6 - 9x$

Question 4

Factor completely using the formula:

(i) $576 - p^2 + 8pq - 16q^2$

(ii) $25x^2 - (y + z)^2$

(iii) $4p^2 - 4q - 3$

(iv) $81 - x^2 - y^2 - 2xy$

(v) $121 - x^2 - y^2 - 2xy$

Question 5**Factorize the expressions:**

(i) $4a^2 - 12ab + 9b^2$

(ii) $36p^2 - 84pq + 49q^2$

(iii) $4a^8 - b^8$

(iv) $(z - 1)^2 + 2(z-1)(2z+3) + (2z + 3)^2$

(v) $p^2 - 9q^2$