



Student No.:	Date: / /	Score: /42
Student Name:		

Revision of Manipulation and Factorization of Polynomials (I)

Exercises

1. Simplify the following expressions.

(a) $-3y^2 \times 4y^3$

(b) $(2x)^3(xy)^2$

(c) $\left(\frac{a}{b^2}\right)^2(-2ab)^2$

(d) $3^{2x} \cdot 9^y$

2. For each of the polynomials, write down

(i) the number of terms.

(ii) the degree of the polynomial.

(iii) the coefficient of x^2 .

(iv) the constant term.

(a) $3x^2 - 4x + 7x^4 + 3x^3 - 6$

(b) $4x^4 - 8x^5 - 2x$

(c) $-\frac{3}{2} - \frac{2}{7}x^2y + \frac{3}{7}x^2y^2 - \frac{1}{6}x^2$

(d) $x^2 + 2xy + xy^2 - 3x$

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3. Expand and simplify the following expressions, and arrange the terms in ascending power of x .

(a) $(3x^2 + 4x - 5) + (2x - x^2 + 3)$

(b) $(5 - 2x^2 - 2x) - x(x + 4)$

(c) $(x + 2)(x - 4) + 5x$

(d) $2x^2(4x + 3) - x(3 - x - 5x^2)$

4. Factorize the following expressions.

(a) $3xy + 6yz - 15y$

(b) $x(m - n) + 2y(m - n)$

(c) $7a - bx + 7b - ax$

(d) $(3m - 1)(a - b) + 2(a - b)$

(e) $(x - 2y)^2 - 2(2y - x)$

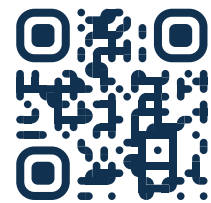
(f) **Harder** $(x - 3)^2 + 2x - 6$

5. (a) Factorize $4xy - 6x + 6y - 9$.
(b) Factorize $6yz - 9z + 8y - 12$.
(c) Using the results of (a) and (b), factorize $(4xy - 6x + 6y - 9) - (6yz - 9z + 8y - 12)$.
6. Consider the polynomial $(k+1)x^2y^2 - (k+3)x^3 + (2k-1)xy^2$, where k is a constant. It is given that the coefficient of the term with the highest degree in the polynomial is 4.
(a) Find the value of k .
(b) Find the coefficient of x^3 term.
7. The selling price of an orange is $\$(ax+1)$, where a is a constant. Kathy wants to buy $(x^2 + x + 7)$ oranges.
(a) How much should Kathy pay for the oranges? Expand and simplify the expansion in descending power of x .
(b) If the sum of the coefficients of x^3 , x^2 and x in the result obtained in (a) is 20, find the value of a .
(c) If $x = 2$, find the amount spent by Kathy.

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M.C.

- Find the value of the polynomial $4x^2 - 3 + 5x$ when $x = 2$.
 - 29
 - 21
 - 3
 - 23
- Factorize $3ab^2 - 3c^2 + bc - 9abc$.
 - $(b - 3c)(3ab + c)$
 - $(3c - b)(3ab + c)$
 - $(b + 3c)(3ab - c)$
 - $(b + 3c)(c - 3ab)$
- Find the coefficient of x^2 in the expansion $(2x^2 - 3x + 6)(3x - 7)$.
 - 23
 - 9
 - 2
 - 6
- Factorize $x(a - b) - 2y(b - a)$.
 - $(x - 2y)(a - b)$
 - $(x - 2y)(b - a)$
 - $(x + 2y)(a - b)$
 - $(x + 2y)(b - a)$



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