



UNIVERSITY OF RUHUNA
DEPARTMENT OF MATHEMATICS

BACHELOR OF SCIENCE (GENERAL) DEGREE (LEVEL II)

INDUSTRIAL MATHEMATICS

IMT 2b2β: Mathematical Computing

Assignment No: 04

Semester I, 2012

1. Expand the following expression:

(i) $(x + 3)^{13}$

(ii) $(x + 9)^2(x^3 + 4x + 5)$

(iii) $(a + b)^{12}$

(iv) $(a + b)^{12}(a - c)^3(ds + gh)^2$

(v) $(x + 2)^3(x^3 + 4x - 2)(x + 1)^4$

2. Factorize the following expressions:

(i) $4(x + 3) + m(x + 3)$

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

(iii) $3x(x - 4) - 7(x - 4)$

(iv) $72y^2p - 18y^3p^2$

(v) $3x^2 + 6x - 18$

(vi) $8x + 12y + 10x + 15y$

(vii) $x^27x + 3x21$

(viii) $18x^2 + 12xy$

3. Simplify the following expression:

(i) $\frac{(3^{-1}a^4b^{-3})^{-2}}{(6a^2b^{-1}c^{-2})^2}$

(ii) $\frac{3x + 12}{3}$

(iii) $\frac{6xy + 18x}{12}$

(iv) $\frac{(x^2 - a^2)}{(x - a)}$

(v) $\frac{3x^2 - 9x}{2x - 6}$

4. (a) What are the factors of 18?
(b) What are the factors of 9567824?
(c) What are the factors of 1092?
(d) What are the factors of 1050?
(e) What are the factors of $a^3 + b^3$?
(f) What are the factors of $a^7 + b^7$?
(g) What are the factors of $6x^2 + 13x + 6$?
-
