MATH3 (814013) – SPRING 2007

WORKSHEET 5

Question (1) : Circle the prime numbers:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

Question (2) : Give three examples for composite numbers:

(a) (b) (c)

Question (3) : Write in completely factored form:

(a) 180 =

(b) 36 =

(c) 70 =

(d) 17 =

Question (4) : Factor out the common factor:

(a) $3x^2y - 6x^2y^2 - 3xy^3$

(b) $3y(2y+5) + 2(2y+5)$

(c) $4(2x+5)(3x+1)^2 + 6(2x+5)^2(3x+1)$

Question (5) : Factor completely by grouping:

(a) $2x^2 + 6x + 5x + 15$

(b) $2pr + ps - 6qr - 3qs$

(c) $6wy - xz - 2xy + 3wz$

Question (6) : Factor each polynomial using integer coefficients:

(a) $x^2 - 8x + 12$

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

(c) $2x^2 + 7xy - 4y^2$

(d) $4x^2 - 15xy - 4y^2$

Question (7) : Factor completely relative to integers:

(a) $4m^2 - 12mn + 9n^2$

(b) $x^2 - 16y^2$

(c) $8z^3 - 1$

(d) $m^3 + n^3$

(e) $4a^2b^2 - c^2d^4$

Question (8) : Factor completely relative to integers:

(a) $3x^3 - 48x$

(b) $x^2 - y^2 - 4y - 4$

(c) $3u^4 - 3u^3v - 9u^2v^2$

(d) $3m^4 - 24mn^3$

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

Question (9) : Factor the following by changing the variable:

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

(b) $(A-B)^2 + 4(A-B) + 3$

(c) $(x^2-4)^2 - 2(x^2-4) - 15$

(d) $x^{-2} - 4x^{-1} + 4$

(e) $\frac{1}{x^2} - \frac{4}{x} + 4$

Question (10) : Give an example for prime polynomial: