

Fourteenth Set of Homework for Math 05

Nikos Apostolakis

Please note: You should fully justify your answers.

1 Factoring by identifying common factors

1. Factor out the Greatest Common Factor for each of the following polynomials:

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

(b) $4x^5 - 6x^4 + 8x^2$

(c) $2a^3b - 72ab^3$

(d) $14x^2y^3 - 21x^4y - 7x^3y^2$

(e) $-9a^2b^3c^6 - 18a^4bc^2 + 81a^3b^4c^3$

(f) $-11x^5y^3z^8 + 22x^3y^5z^2 - 55x^4y^2z^4 + 33x^2y^5z^4$

2. Factor the following:

(a) $3(x - 5) + 7x(x - 5)$

(b) $x(4x - 7) + 9(7 - 4x)$

(c) $-2x(3x + 7) + 3x + 7$

(d) $5x(8x - 5) - 8x + 5$

(e) $3(x - 2)^2 - 6x(x - 2)$

2 Factoring by grouping

1. Factor the following:

(a) $ax - ay + bx - by$

(b) $10x^2 - 16xy^2 + 24y^3 - 15yx$

(c) $3a^2x - 4a^2 + 6b^2x - 8b^2$

(d) $2ax - 3ay + 2bx - 3by + 3cy - 2cx$

(e) $x^2 + 2x + 8x + 16$

(f) $a^4 - 3a^2 + 4a^2 - 12$

(g) $6x^2 - 21x + 2x - 7$