1.-

a) $4xy-2x^2y+4xy^2 = 2xy(2-x+2y)$

b) $a^2b^2c+a^3b^2c^2-3a^4b^3c = a^2b^2c(c+ac-3a^2b)$

c) $3a^2bc-9a^2b^2c^2+6a^2b^3c = 3a^2bc(1-3bc+2b^2)$

d) $4x^2y+2xy-6x^2y^2 = 2xy(2x+1-3xy)$

2.-

a) P(– 1) = – 4 P(2) = – 4

b) P(– 1) = – 4 P(2) = 5

c) P(– 1) = – 5 P(2) = 5

d) P(– 1) = 1 P(2) = 37

e) P(– 1) = 32 P(2) = 32

3.-

a) $x^3-2x^2+x = x(x-1)^2$

b) $x^4-16 = (x^2+4)(x+2)(x-2)$

c) $x^3-9x = x(x+3)(x-3)$

d) $x^2-10x+25 = (x-5)^2$

e) $x^4-6x^3+9x^2 = x^2(x-3)^2$

f) $2x^2-16x+32 = 2(x-4)^2$

g) $4x^2-100 = 4(x+5)(x-5)$

h) $x^2-6x+5 = (x-1)(x-5)$

i) $x^3-3x^2-4x = x(x+1)(x-4)$

4.-

a) $\dfrac{x^2-4}{x^2+4x+4} = \dfrac{x-2}{x+2}$

b) $\dfrac{x^3-9x}{x^3-6x^2+9x} = \dfrac{x+3}{x-3}$

c) $\dfrac{x^2-10x+25}{x^2-25} = \dfrac{x-5}{x+5}$

d) $\dfrac{x^2+6x+9}{x^2+2x-3} = \dfrac{x+3}{x-1}$