~~02~~/Cz HW

p.466

2. a) $(x+2)^5$

$= x^5 + 5x^4(2) + 10x^3(2)^2 + 10x^2(2)^3 + 5x(2)^4 + (2)^5$

$= x^5 + 10x^4 + 40x^3 + 80x^2 + 80x + 32$

b) $(x-1)^6$

$= x^6 + 6x^5(-1)^1 + 15x^4(-1)^2 + 20x^3(-1)^3 + 15x^2(-1)^4 + 6x(-1)^5 + (-1)^6$

$= x^6 - 6x^5 + 15x^4 - 20x^3 + 15x^2 - 6x + 1$

c) $(2x-3)^3$

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

$= 8x^3 - 36x^2 + 54x - 27$

4. a) $(k+3)^4$

$= k^4 + 4k^3(3)^1 + 6k^2(3)^2 + 4k(3)^3 + (3)^4$

$= k^4 + 12k^3 + 54k^2 + 108k + 81$

b) $(y-5)^6$

$= y^6 + 6y^5(-5)^1 + 15y^4(-5)^2 + 20y^3(-5)^3 + 15y^2(-5)^4 + 6y(-5)^5 + (-5)^6$

$= y^6 - 30y^5 + 375y^4 - 2500y^3 + 9375y^2 - 18750y + 15625$

c) $(3q-4)^4$

$= (3q)^4 + 4(3q)^3(-4) + 6(3q)^2(-4)^2 + 4(3q)(-4)^3 + (-4)^4$

$= 81q^4 - 432q^3 + 864q^2 - 768q + 256$

d) $(2x+7y)^3$

$= (2x)^3 + 3(2x)^2(7y) + 3(2x)(7y)^2 + (7y)^3$

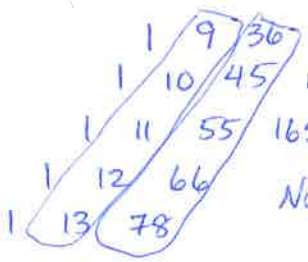
$= 8x^3 + 84x^2y + 294xy^2 + 343y^3$

f) $(2z^3 - 3y^2)^5$

$= (2z^3)^5 + 5(2z^3)^4(-3y^2)^1 + 10(2z^3)^3(-3y^2)^2 + 10(2z^3)^2(-3y^2)^3 + 5(2z^3)^1(-3y^2)^4 + (-3y^2)^5$

$= 32z^{15} - 240z^{12}y^2 + 720z^9y^4 - 1080z^6y^6 + 810z^3y^8 - 243y^{10}$

5.a)



$(x-2)^{13}$

$= x^{13} + 13x^{12}(-2) + 78x^{11}(-2)^2$

$= x^{13} - 26x^{12} + 312x^{11}$ are the first 3 terms

10. $(3x-5y)^6$

$= (3x)^6 + 6(3x)^5(-5y)^1 + 15(3x)^4(-5y)^2 + 20(3x)^3(-5y)^3 + 15(3x)^2(-5y)^4 + 6(3x)(-5y)^5 + (-5y)^6$

$= 729x^6 - 7290x^5y + 30375x^4y^2 - 67500x^3y^3 + 84375x^2y^4 - 56250xy^5 + 15625y^6$