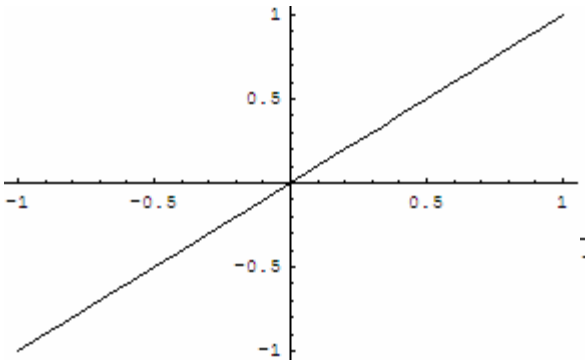
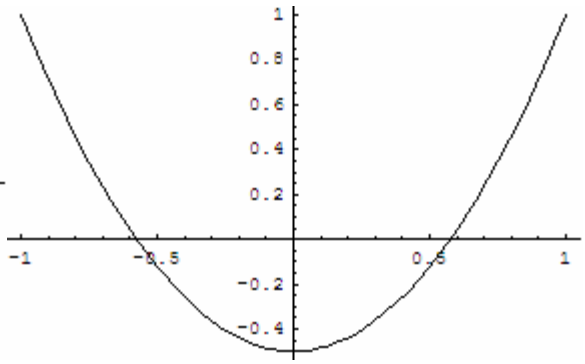
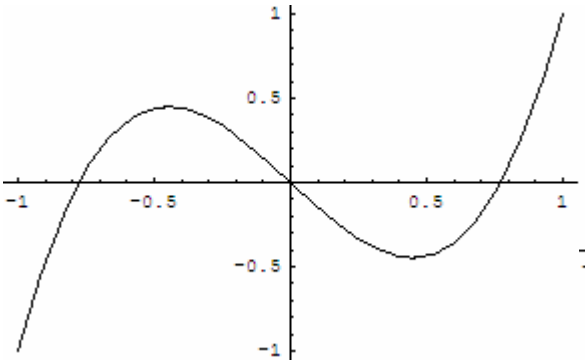
THE FIRST EIGHT LEGENDRE POLYNOMIALS



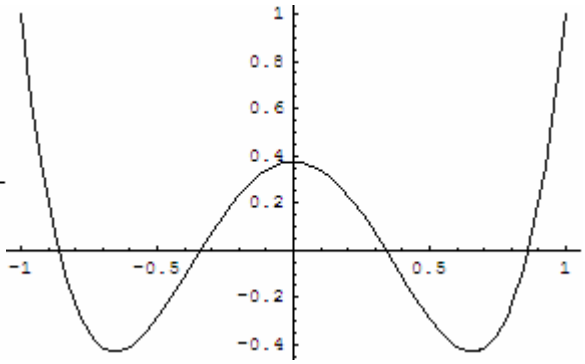
$P_1(x) = x$



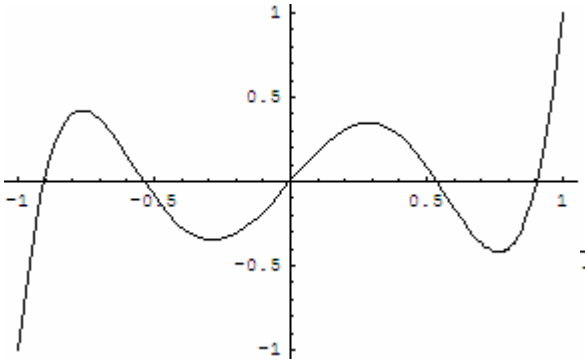
$P_2(x) = ½ (3x^2 – 1)$



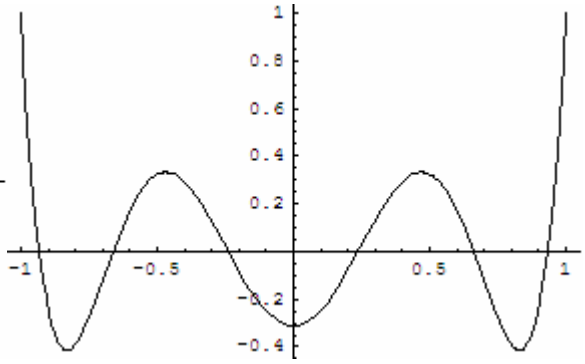
$P_3(x) = ½ (5x^3 – 3x)$



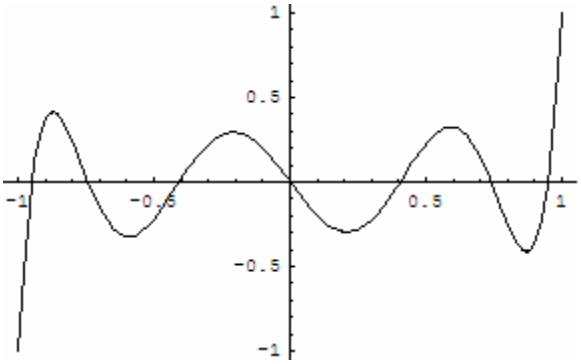
$P_4(x)= 1/8 (35x^4 – 30x^2 +3)$



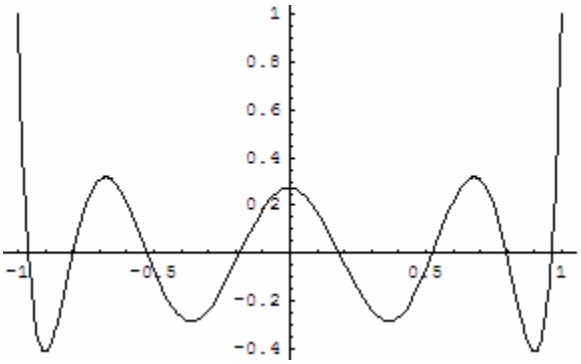
$P_5(x) = 1/8 (63x^5 – 70x^3 + 15x)$



$P_6(x)= 1/16 (231x^6 -315x^4 +105x^2 – 5)$



$P_7(x) = 1/16\ (429x^7 - 693x^5 + 315x^3 - 35x)$



$P_8(x)=1/128\ (6435x^8-12012x^6+6930x^4-1260x^2+35)$