

Expand the polynomials $p(x)$ around $x=a$, and use the result to

HW2

(1) Find the tangent line to the graph of $p(x)$ at $x=a$.

(2) Find the derivative of $p(x)$ at $x=a$; i.e. find $p'(a)$.

(i) $p(x) = x^2 + 1, a = 1$

(ii) $p(x) = x^3 - x + 3; a = 2$

(iii) $p(x) = x^4 + x^2, a = -1$

(iv) $p(x) = x^{15} + 3x^{13} + x^7 - x^2 + 1, a = 3$