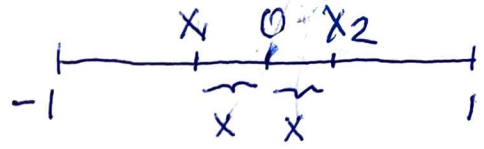
Hints for Assignment #1, Q's 3 & 4.

- The reference interval $[-1,1]$ makes the question easier.
- For #3, you can use symmetry and assume

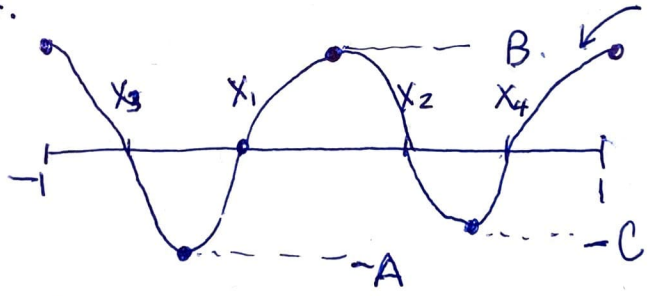
$$x_{1,2} = \pm x$$
$$x_{3,4} = \pm y.$$



- For #4, you can also use symmetry

$$x_1 = -1 \quad x_{2,3} = \pm x \quad x_4 = +1.$$

- The C will involve the maximum absolute value of a quartic polynomial with roots $x_1, \ldots, x_4$.



Note that if adjacent maxima are not equal, they can be reduced (that is, if $A > B$, the maximum of A & B can be reduced by moving x_1 to the left). So $A = B = C = P(-1) = p(1)$.

- If these questions are too hard, answer them for 3 point quadratic interpolation instead, with error $\leq C K_3 h^3$.