Exercise 05 - Asymptotic Boundary Notations

Create a text file named '`exercises05.txt`' that contains the proof of each statement below by using the definitions of the asymptotic notations given

$$p(n) = \sum_{i=0}^{d} a_i n^i$$

where $a_d > 0$, and let k be a constant integer.

1. If $k \geq d$, then $p(n) = O(n^k)$
2. If $k \leq d$, then $p(n) = \Omega(n^k)$
3. If $k = d$, then $p(n) = \Theta(n^k)$
4. If $k > d$, then $p(n) = o(n^k)$
5. If $k < d$, then $p(n) = \omega(n^k)$