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Homework 1

- 1) In each of the following situations, indicate whether $f = O(g)$, or $f = \Omega(g)$, or both (in which case $f = \Theta(g)$).

Answer:

- 2) Show that, if c is a positive real number, then $g(n) = 1 + c + c^2 + \dots + c^n$ is:

- (a) $\Theta(1)$ if $c < 1$
- (b) $\Theta(1)$ if $c = 1$
- (c) $\Theta(1)$ if $c > 1$

Answer:

- 3) Determine the number of Paths of length 2 in a complete graph of n nodes. Give your answer in Big- O notation as a function of n .

Answer: