Summer 2018 Algorithms and Analysis Tools Exam, Part A

3) (10 pts) ANL (Summations)

Recall that $\sum_{i=0}^{n-1} 2^i = 2^n - 1$.

- (a) (8 pts) Using this result, determine a closed-form solution in terms of n, for the summation below.
- (b) (2 pts) Determine the numeric value of the summation for n = 9.

$$\sum_{i=0}^{n} (\sum_{j=0}^{i-1} 2^{j})$$