Please complete this worksheet by **November 1st, 2021 by 11:59pm.**

Once you upload a picture of your work ([here](#)), the solutions will become available so you can study for the weekly quizlet, which may draw one problem from this week’s worksheets.

**Problem 1**

How many surjective functions are there from set $A$ to set $B$ if $|A| = n$ and $|B| = 2$? Recall that a function $f : A \rightarrow B$ is surjective iff $\forall b \in B, \exists a \in A, f(a) = b$.

**Problem 2**

How many strings of four decimal digits

(a) end with an even digit?

(b) have exactly three digits that are 9s?

(c) contains each digit (0 – 9) at most once?

**Problem 3**

In how many ways can a photographer at a wedding arrange six people in a row, including the married couple, if

(a) the married couple is next to each other?

(b) the married couple is not next to each other?