

Due: Monday October 10th, 1pm.

1) 2.5.3

2) 2.5.4

3) 2.5.5

4) 2.5.7

5) Suppose A is a set of 10 two-digit numbers. Show that we can find two subsets $B \subset A$ and $C \subset A$ that are disjoint (i.e. have empty intersection) so that the sum of the numbers in B is equal to the sum of the numbers in C .

6) Suppose A is a set of size n and B is a set of size m . Use the Inclusion-Exclusion principle to give a formula for the number of surjections from A to B . (A surjection is a function $f : A \rightarrow B$ such that for every $b \in B$ there exists some $a \in A$ for which $f(a) = b$.)