

Chapters 6.1-6.2
Monday, Week 5

Warmup

An old English nursery rhyme:

“As I was going to St. Ives,
I met a man with seven wives.
Every wife had seven sacks,
Every sack had seven cats,
Every cat had seven kits...”

If the man offers to give me one of his cats or kittens, how many options do I have?

Inclusion-Exclusion

How many numbers between 1 and 60 are divisible by 2?

How many are divisible by 3?

How many are divisible by 5?

How many are divisible by 2 or 3 or 5?

Symmetries and Division

How many ways to hang the painting?

Pigeonhole Principle

True or false: Every Thanksgiving, two of the turkeys that are eaten for dinner will have the same weight when rounded to the nearest millionth of a pound!

It is said of the town of Lake Wobegon that “all the women are strong, all the men are good looking, and all the children are above average.” Discuss.