

Math 1050-006 Homework 2

Assigned: 9/5/2012

Due: 9/12/2012

Please clearly identify which problems you are working on.

Please staple all your solutions together and write your name and student id number clearly on the top of the first page.

Book Problems:

- 1) Counting 1: 1, 2, 3, 6, 7, 8
- 2) Counting 2: 1, 2, 4, 5, 7, 8
- 3) More on Functions: 1-6, 13, 15, 17, 18

Other Problems:

- 1) What is the sum from $j=0$ to $j=n$ (j is an index increasing by 1 each time) of n choose j . In other words what is $(n \text{ choose } 0) + (n \text{ choose } 1) + \dots + (n \text{ choose } (n-1)) + (n \text{ choose } n)$.
(Hint: this is identical to summing across the n th row of Pascal's triangle)
- 2) $f: \mathbb{N} \rightarrow \mathbb{R}$ is a function and $f(\clubsuit) = \pi$
What type of function is f ?
What can we say about the object \clubsuit , is it number and if so what set does it belong to?
- 3) If $g(\odot) = (\odot) / (\odot - 3)$ what is the implied domain of g ? What is the range of g ?