MATH 163 PROBLEM SET 1

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Abstract. Due Monday, January 30, 2006

0.1. **Problem 1.** Find the *cardinality* of the following sets:

(1) $A = \{1, 2, 3, 4, 5, 6, 7\}$.
(2) $B = \{1, , 3, 17\}$.
(3) $A \cap B$. (with A, B as above)
(4) $A \cup B$. (with A, B as above)
(5) $A \backslash B$.
(6) The set of (reduced) fractions with denominator less than 6 which are strictly between 0 and 1.
(7) The set of natural numbers divisible by 17.

0.2. **Problem 2.** Write down all subsets of the set $\{1, 2, 3, 4, 5\}$.

0.3. **Problems 3-11.** Gensler, Exercises 2.1a.

Key words and phrases. discrete, mathematics, sets, logic, combinatorics, graphs.