

MAT 119
Quiz #7
October 27, 2005

Name: Key

You may not use your notes. Please show all of your work. An answer without justification will receive little credit.

- (1) How many subsets of $\{1, 2, 3, 4, 5, 6\}$ are there which have size 3?

$$\binom{6}{3} = \frac{6!}{3! 3!} = \frac{6 \cdot 5 \cdot 4}{6} = 20$$

- (2) List all multi-sets of size 2 whose elements are 1, 2, 3 or 4.

$\langle 1, 1 \rangle$

$\langle 1, 2 \rangle$

$\langle 1, 3 \rangle$

$\langle 1, 4 \rangle$

$\langle 2, 2 \rangle$

$\langle 2, 3 \rangle$

$\langle 2, 4 \rangle$

$\langle 3, 3 \rangle$

$\langle 3, 4 \rangle$

$\langle 4, 4 \rangle$