

## Set Notation Examples

1. Your experiment is to roll a single dice.

(a) What is the sample space  $S$  for this experiment.

(b) Define the events A, B, and C to be

$$A = \{1, 2\} \quad B = \{1, 3\} \quad C = \{2, 4, 6\}$$

Find the following events.

i.  $A \cup B$

ii.  $A \cap B$

iii.  $\bar{A}$

iv.  $A \cap \bar{C}$

v.  $\bar{A} \cap \bar{B}$

2. Your experiment is to flip a coin 2 times.

(a) What is the sample space  $S$  for your experiment.

(b) Define the events A, B and C to be

$$A = \{\text{at least one head}\} \quad B = \{\text{exactly one head}\} \quad C = \{\text{no heads}\}$$

Find the following events.

i.  $A \cap B$

ii.  $B \cup C$

iii.  $\bar{A} \cap C$

iv.  $B \cap \bar{C}$