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MTH 1101 **Applications of Algebra** **Spring 2000**

QUIZ 6

Instructions: Put your name in the blanks above. Put your final answers to each question in the designated spaces on these pages. Show your work—if there is not enough room, use another sheet.

(1) Compute:

(a) $C(8,3) =$

(b) $C(100,100) =$

(2) In how many different ways can a fast food chain select 4 out of 9 possible sites for the construction of new franchises?

(3) A basketball team has 14 players: 6 guards, 5 forwards, and 3 centers. How many different teams can be formed, where a team consists of 2 guards, 2 forwards, and 1 center?

(4) A House investigation subcommittee of 4 members is to be selected from a House committee of 14 members, of which 9 are men and 5 are women. How many subcommittees containing at least 3 women are possible?

(5) A fair coin is tossed 3 times. On each toss, a record is made of whether it lands with heads or tails turned up.

(a) Enumerate the elements of the sample space S for this experiment.

(b) Enumerate the elements of the event $E = \{\text{at least two heads come up}\}$. Compute $P(E)$.

(6) A single card is to be drawn from a standard deck of 52 cards.

(a) What is the probability that the card is red?

(b) What is the probability that the card is a face card (Jack, Queen, or King)?

(7) A pair of dice is to be rolled. What is the probability that

(a) A sum of 6 is rolled.

(b) A sum of 11 or higher is rolled.