Instructor: Prof. A. Suciu **Name:** _____

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

QUIZ 5

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) $P(6,1) =$

(b) $P(6,4) =$

(c) $P(6,6) =$

(d) $\dfrac{202!}{200!} =$

(2) A movie house is showing three movies: *Alien*, *Jaws*, and the *Shining*. The matinee shows are on Saturday and Sunday, at 9AM and 11AM. The movie *Alien* cannot be scheduled on the 9AM showing, since management thinks it is too scary to be seen that early in the morning.

(a) Draw a tree diagram showing all the possible schedules.

(b) List all the possible schedules.

(3) In how many different ways can 8 high-school cheerleaders line up for a group photo?

(4) The rarest language in the world is Koubykh, once spoken in Kazakhstan. This is a highly complex language, with 70 consonants but only 4 vowels. How many 3-letter words starting with a vowel can be formed, if letters may not be repeated.

(5) How many different five–letter words (meaningful or not) can be formed from the letters in the word **PARENTS**?

(6) How many distinct arrangements of the letters in the word **MISSISSIPPI** are there?