

Name _____

13-4A Lesson Master**Questions on SPUR Objectives**
See Student Edition pages 934–937 for objectives.**SKILLS** Objective C

- Write as a factorial: $1 \cdot 2 \cdot 3 \cdot 4 \cdot 5 \cdot 6 \cdot 7 \cdot 8$ _____
- Write as a quotient of factorials: $12 \cdot 13 \cdot 14 \cdot 15$ _____
- Write $\frac{20!}{16!}$ as a product of four numbers. _____
- For what value of n does $20 \cdot n! = 20!$? _____

SKILLS Objective D

- Multiple Choice** Which of the following is equal to ${}_{12}C_9$? _____
 A $\frac{12!}{9 \cdot 3}$ B $\frac{12!}{9!}$ C $\frac{12!}{3!}$ D $\frac{12!}{9!3!}$
- If $d \leq 20$, write ${}_{20}C_d$ using factorials. _____
- Evaluate:
 - ${}_{100}C_{98}$ _____
 - ${}_{72}C_{10}$ _____

USES Objective H

- A high school class has 120 students.
 - They want to choose a four-person committee to plan a dance. How many different committees are possible? _____
 - They want to choose a president, vice-president, secretary, and treasurer for the dance committee. How many different ways can this be done? _____
- In a standard deck of cards, there are thirteen hearts: A, 2, 3, 4, 5, 6, 7, 8, 9, 10, J, Q, K. In how many ways can five hearts be selected? _____
- How many permutations are there of the letters in the word "MEAT"? _____
 - List those that are also words in English. _____