

8A.7 Learning Opportunity

Name: _____



Permutations $nPr = \frac{n!}{(n-r)!}$

For each word problem consider why the order matters. Because the order matters, these are permutations rather than combinations. Please show your work on a separate sheet of paper. Find your answer in the answer column on the right. Write the word next to the answer in the box containing the exercise number at the bottom of this page.

Find the value of the expression.

1 ${}_6P_6$

2 ${}_6P_3$

3 ${}_{15}P_4$

4 ${}_{100}P_2$

Solve.

- 5 Kevin Klodrite rented three movies from his local video store, but he can't decide in what order to watch them. How many choices does he have?
- 6 You have a homework assignment in each of 4 different subjects tonight. In how many different orders can you do the four assignments?
- 7 In how many different ways can a president, vice president, and treasurer be elected from a class of 30 students?
- 8 A radio disc jockey has a library of 250 different songs from which to choose. In how many different ways can he program the next two songs he will play?
- 9 In how many different ways can 7 stuffed animals be arranged side by side on a shelf?
- 10 If a school offers 11 different subjects, how many different schedules of 5 classes are possible?
- 11 Six hundred people are competing in a triathlon. There is a \$1000 prize for first and a \$500 prize for second. How many different first-second place finishes are possible?
- 12 How many different batting orders are possible for the nine players on a baseball team?
- 13 Surelock Lock Company makes locks with 50 numbers printed on the dial. A lock is opened by dialing three different numbers in a certain order. How many different combinations are possible?
- 14 In Exercise #13 above, how many different combinations would be possible if the three numbers do *not* have to be different (for example, 20-20-20 could be a combination)?

9750 • SHEETS

362,880 • IN

32,760 • BED

64,880 • KISSED

55,440 • GOT

24 • FELL

117,600 • THE

120 • TWO

238,500 • BITING

150,000 • FALL

62,250 • LOVE

32 • CRAWLED

359,400 • MARRIED

6 • WHO

720 • THE

18,540 • OUT

24,360 • IN

125,000 • SPRING

402,720 • AFTER

9900 • BUGS

5040 • AND

Did You Hear About . . .

1	2	3	4	5	6	7
8	9	10	11	12	13	14
						?