

NAME: \_\_\_\_\_

*P.I. A.N.8: Determine the number of possible arrangements (permutations) of a list of items*

*P.I. A2.S.10: Calculate the number of possible permutations ( ${}_nP_r$ ) of  $n$  items taken  $r$  at a time*

1. Find:  ${}_4P_2$

[A] 8      [B] 12      [C] 24      [D] 6

2. Find:  ${}_5P_4$

[A] 120      [B] 9      [C] 240      [D] 20

3. Find:  ${}_6P_5$

[A] 30      [B] 720      [C] 11      [D] 1440

4. Use a calculator to evaluate  ${}_7P_4$ .

5. Use a graphing calculator to determine  ${}_{15}P_8$ .

6. For  $r = 4$  and  ${}_nP_r = 360$ , what is the value of  $n$ ?

[A] 90      [B] 6      [C] 2      [D] 4      [E] 3

7. If no digits can be used more than once, how many 2-digit numbers can be formed using only the digits 9, 1, 5, and 6?

[A] 9      [B] 10      [C] 6      [D] 12

8. If no digits can be used more than once, how many 3-digit numbers can be formed using only the digits 5, 8, 2, 9, and 1?

[A] 57      [B] 58      [C] 60      [D] 30

9. If no digits can be used more than once, how many 5-digit numbers can be formed using only the digits 2, 6, 9, 4, 3, and 0?

[A] 720      [B] 360      [C] 718      [D] 723

10. What is the numerical probability that 5 digits chosen from the digits 1-5 will be chosen in numerical order?

[1] B

[2] A

[3] B

[4] 840

[5] 259,459,200

[6] B

[7] D

[8] C

[9] A

[10]  $\frac{1}{120}$