Name



9) ₇P₅

10) ₇P₆

Find the probability of each event.

- 13) A gambler places a bet on a horse race. To win, he must pick the top three finishers in order. Nine horses of equal ability are entered in the race. Assuming the horses finish in a random order, what is the probability that the gambler will win his bet?
- 14) Kali is carrying six pages of math homework and four pages of English homework. A gust of wind blows the pages out of her hands and she is only able to recover six random pages. What is the probability that she recovers all of her math homework?

- 15) A class has six girls and three boys. If the teacher randomly picks six students, what is the probability that he will pick all girls?
- 16) A nature preserve has a population of ten black bears. They have been tagged #1 through #10, so they can be observed over time. Two of them are randomly selected and captured for evaluation. What is the probability that bears #3 and #5 are captured for evaluation?

- 17) You've purchased a lottery ticket and your numbers are: 2-9-6. A lottery official randomly selects three balls from a set of eleven balls that are numbered from #1 to #11. To win, your numbers must match the selected numbers in order. What is the probability of winning the lottery?
- 18) A gardener has eleven identical-looking tulip bulbs, of which seven will produce yellow tulips and four will become pink. She randomly selects and plants seven of them and then gives the rest away. When the flowers start to bloom, what is the probability that all of them are yellow?

Answers to Permutations

1) 120	2) 720	3) 336	4) 360
5) 720	6) 120	7) 840	8) 210
9) 2,520	10) 5,040	11) 120	12) 5,040
13) $\frac{1}{504} \approx 0.198\%$	14) $\frac{1}{210} \approx 0.476\%$	15) $\frac{1}{84} \approx 1.19\%$	16) $\frac{1}{45} \approx 2.222\%$
17) $\frac{1}{990} \approx 0.101\%$	18) $\frac{1}{330} \approx 0.303\%$		

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