

Name: key Date: _____

Advanced Functions - Review for Probability Quiz WS

Directions: Complete each problem. Then state the answer from the ANSWER BANK.
No answer will be repeated.

A. ~~0.147~~
B. ~~93,024~~
C. ~~0.088~~
D. ~~1,365~~
E. ~~150~~
F. ~~0.081~~
G. ~~20,442,240~~

H. ~~0.215~~
I. ~~4,989,600~~
J. ~~0.191~~
K. ~~0.278~~
L. ~~0.481~~
M. ~~0.350~~
N. ~~0.030~~

- E 1. Louise's wardrobe consists of 5 shirts, 5 pairs of pants, and 6 pairs of shoes. How many outfits can she assemble from these items.
 $5 \times 5 \times 6 = 150$
- G 2. How many pass-codes can be formed if there must be 7 characters with 2 letters that can repeat and 5 numbers that cannot repeat.
 $26 \times 26 \times 10 \times 9 \times 8 \times 7 \times 6 = 20442240$
- I 3. Find the number of distinct arrangements for letters in the word "information."
11 letters total \rightarrow 2 i's 2 o's 2 n's $\Rightarrow \frac{11!}{(2!2!2!)} = 498960$
- B 4. Karen is in charge of listing the first, second, third, and fourth place finishers in a race with 19 contestants on a bulletin board. How many different ways can she make the list?
 ${}_{19}P_4 = 93024$
- D 5. Harry is choosing 4 library books from a selection of 15 books for a research paper. How many ways can Harry select the books?
 ${}_{15}C_4 = 1365$
- M 6. A basket contains 4 apples, 7 oranges, 4 pears, and 5 peaches. If one is selected at random, what is the probability that an orange was selected?
20 total $\frac{7}{20} = .35$
- J 7. A bag of golf tees contains 20 red, 17 blue, 20 yellow, 30 green, 19 orange, 23 white, and 28 black tees. What is the probability that if you choose a tee from the bag at random, you will choose a green tee?
157 total $\frac{30}{157} = .191$
- C 8. Kevin has a box of writing utensils that contains 6 pencils, 6 crayons, 4 pens, and 3 markers. He selects two utensils at random. What is the probability that he selected two crayons?
19 total $\frac{{}_6C_2}{{}_{19}C_2} = \frac{15}{171} = .088$
- H 9. A dart is thrown at the round dart board pictured below. What is the probability that the dart lands *inside* the square but *outside* the circle (i.e., the "corners")?

side = 6



$$\frac{\text{area of sq} - \text{area circle}}{\text{area of sq}} = \frac{6^2 - \pi(3^2)}{6^2} = \frac{(36 - 9\pi)}{36} = .215$$

- F 10. Suppose you have a box with 2 blue marbles, 4 red marbles, and 6 yellow marbles. You are going to pull out one marble, then, without replacement, draw another marble. What is the probability of pulling out a red marble and then a blue marble?
12 total $\frac{4}{12} \cdot \frac{2}{11} = \frac{8}{132} = .061$
- N 11. A magician asks his helper to draw a card from a standard deck of 52 playing cards. The card is replaced and the deck shuffled. The magician then asks the helper to draw a second card. What is the probability that the first card was a Jack and the second card was a number less than 7?
52 total $\frac{4}{52} \cdot \frac{20}{52} = \frac{80}{2704} = .030$
- A 12. The local meteorologist says there's a 30% chance of snow for Saturday, Sunday, and Monday. Since you have a busy weekend planned, but you'd prefer not to attend school on Monday, you'd like to know the probability that there will be no snow on Saturday and Sunday, but snow on Monday?
.3 = snow
.7 = no snow
.7 x .7 x .3 = .147
- K 13. Two dice are tossed: what is the probability that the sum will be 8 or 7?
36 total $\frac{5}{36} + \frac{5}{36} = \frac{10}{36} = .278$
- L 14. A single card is to be drawn from a standard deck of playing cards. What is the probability that the card is an odd number or Diamond?
52 total $\frac{16}{52} + \frac{13}{52} - \frac{4}{52} = \frac{25}{52} = .481$