Set 3 - Statistics, Bakery

(no calculator)

1. Lila has 3 types of sprinkles, red, green, and white, and three types of frostings, red, green, and white. She also has red velvet cookie dough, sugar cookie dough, and shortbread cookie dough. And finally, she has 7 different types of decorative charms that she can add to the cookies How many different types of cookies can she make?
    a. 189 cookies
2. The bakery is doing a giveaway where participants will spin a wheel and can earn coupons. The wheel has 10 slices. Five of the slices have no coupon, three of the slices have a $1 coupon, one slice has a $5 coupon, and the last slice has a $10 coupon. What is the mean expected value of the coupon that a participant can get if all the slices are equally sized?
    a. $1.80
3. Lila weighed all the chocolate cakes in the bakery today. She put the data into a computer and found out that it followed a normal distribution with a mean of 3 pounds and a standard deviation of 0.2 pounds. What percentage of the total cakes in the bakery weigh between 2.6 pounds and 3.2 pounds?
    a. 81.5% (accept up to 82%)
4. Viktor has been observing the customers. The probability that a customer will choose a chocolate cake is 20%, and the probability that a customer will choose a vanilla cake is 15%. If the events are inclusive, what is the probability that a customer will choose a chocolate cake or a vanilla cake?
    a. 32% or 0.32 (do not accept 0.32%)
5. Lila sells cake pops at a stand in the bakery for $2 each. The line y= 21x - 210 graphs the predicted revenue from selling strawberry cakes. If the bakery makes $3900 in revenue from selling 200 strawberry cakes this month and she wants to make up the residual revenue by selling cake pops, how many cake pops will she have to sell?
    a. 45 cake pops

(calculator allowed)

6. Someone has broken into the bakery and is trying to access the safe. The safe has a three-digit code and accepts digits 0-9, so 10 different digits. What is the probability that the person who broke in guesses on the fifth try without repeating combinations?
    a. 0.001, or a 0.1% chance.
7. Lila is arranging platters with red, orange, yellow, green, blue, and purple macarons. If she puts three different colored macarons on a tray, how many different-looking trays, without considering the order the macarons are placed in, can she make?
    a. 20 different trays
8. Lila is catering baked goods to a class of 26 students. In that class, 20 students want strawberries on the tarts, and 18 students want blueberries on the tarts. If 14 students want both strawberries and blueberries on the tarts, to the nearest tenth, what percentage of the class doesn't want either strawberries or blueberries on the tarts?
    a. 7.7% of the class

9. Viktor has a 24% chance of arriving late to the delivery truck on delivery day. The delivery truck has an 18.5% chance of being absent on delivery day. If Viktor's tardiness and the truck's absence are both independent events, what is the probability that, on a random day, Viktor is on time and the delivery truck is not absent on delivery day?
    a. 95.96% (Accept equivalents)
10. 20% of the employees like chocolate frosting, while the rest like vanilla frosting. and 50% of them like vanilla cake, while the rest like chocolate cake. There are 30 employees. How many employees like vanilla frosting, given that they like chocolate cake, if liking a certain frosting and liking a certain cake are independent events?
    a. 12 employees like vanilla frosting