Set 3 - Statistics - Bakery

(no calculator)

1. After receiving some complaints about the price-by-weight company policy, Lila sampled the weight of 6 similar chocolate cakes and got 2.5 lbs, 2.6 lbs, 3lbs, 2.2 lbs, 3.2 lbs, and 2.1 lbs. If the price per pound of cake is 5 dollars, what is the median price for the cakes that Lila sampled?
    a. $12.75
2. One of the workers cannot see color, and unfortunately, the sprinkle jars were not labeled. There are 10 sprinkle jars. 6 jars have square sprinkles, and 4 jars have spherical sprinkles. Of the jars with square sprinkles, half are red and half are blue, and of the jars with spherical sprinkles, a quarter of the jars are red and a quarter of the jars are blue. What is the probability that the worker will pick a jar of red sprinkles at random?
    a. 4/10 or ⅖ or 0.4, or 40%. Do not accept 0.4%.
3. Lila has paid her workers in tips this week. The distribution of tips across all workers follows a normal distribution with a mean of $250 and a standard deviation of $10. If Viktor earned $60 in tips on Monday and $50 in tips each day from Tuesday to Friday, what is his z-score on the tip distribution?
    a. 1
4. A customer, allergic to both peanut butter and milk, had an extreme allergic reaction after randomly selecting two types of treats from two trays. The first tray had 4 peanut butter cookies and 6 lemon cookies. The second tray had cinnamon rolls made with milk and those made without milk. If there was a 30% chance that the customer chose both a peanut butter cookie and a cinnamon roll made with milk, how many cinnamon rolls out of the 20 rolls on the tray were not made with milk?
    a. 5 rolls
5. Viktor worked irregular hours at the bakery this week, but totaled 44 hours across 5 days. Based on his daily average work hours and an hourly pay of $20, if the mean daily pay of workers in the same bakery is about $180, did he make more or less than the average on average and by how much?
    a. He made $4 less than average.

(calculator allowed)

7. Lila has set up a basketball hoop and makes it so that, if all employees stand away from the hoop at the same distance, they have a 15% chance of making each shot. If the employee makes 1 out of 3 shots, they earn $5 extra in tips. If they make 2 out of 3 they earn $10 extra in tips, and if they make all three, they earn $1000 in tips. What is the probability that an employee will not make all three shots?
    a. 61.4%, 61%, or 0.61 or 0.614. Do not accept 0.61%
8. The employees this week have worked 40.5 hours, 30.5 hours, 40 hours, and 35 hours. If the employees get paid an hourly rate of $17.50, and about 18% of their paycheck is put towards taxes and other contributions, what is the mean take-home pay?
    a. $523.78
9. The distribution for pre-tax pay amongst the workers in the bakery is normal with a mean of $675 and a standard deviation of $27. If Viktor gets paid $18 an hour during weekdays

and $15 an hour during weekends, and he worked 7 hours per day during the weekdays and 9 hours on Saturday, as a decimal, what is his z-score on the distribution of pre-tax pay?

   a. 3.33 or 3.3.

10. This week, Lila predicts that 45% of orders will be for macarons and 55% for cakes. She also predicts that 65% of orders will be during the weekday and 35% during the weekend. If the type of good ordered and the time of the week ordered are independent events, and she expects about 500 orders this week, to the nearest whole number, how many orders are expected to be for macarons during the weekday?
    a. 179 orders.