Set 4: Algebra, Bakery

(no calculator)

1. A cubic cake box with a height of 5 inches is next to a square card with a height of 5 inches. What is the difference between the volume of the cubic box and the area of the square card?
    a. 100
2. Jorge is doing networking and has made the goal of meeting 5 more new people than the day before in the industry every day. If on day one, he meets 5 new people, how many total people will he have networked with by the end of the week?
    a. 140 new people.
3. An open bowl of pumpkin was left on the counter and hidden behind a toaster. On day one, it was 2% moldy, and the quantity of mouldy pumpkin doubles every day (not the percentage). By the end of a week, what percentage of the pumpkin bowl will be mouldy?
    a. It will be completely mouldy. (128% is acceptable)
4. Lila orders a box of chocolate wafers from a European distributor. She has a budget of $50 for the chocolate wafers. For each kg of chocolate, she must pay $2.5 USD. What is the maximum number of pounds of chocolate she can buy, to the nearest whole number?
    a. 44 pounds of chocolate.
5. Amira is looking at catering company prices. One company charges $15.50 per hour, and another company charges at $46.5 every three hours. For 6 hours, which company has the cheaper rate?
    a. Both companies will charge the same price of $93

(calculator allowed)

6. There is a dispute between the employees about wages. Both Viktor and Jorge totaled $256 in wages today. The two of them worked a total of 12.5 hours. If the current year is 2026, and Viktor was born in 2005 and Jorge was born in 2006, if the wage ended up being split using a system where their hourly wage matches their age, how many hours did each employee work?
    a. Viktor worked 6 hours, and Jorge worked 6.5 hours.
7. The frosting machine can dispense 2.5 pounds of frosting in one minute. To the nearest whole number, how many grams of frosting does it dispense in one second, if there is 2.2 kilograms in 1 pound?
    a. 92 grams of frosting in one second.
8. The base price of a cake starts at $9.00 and increases by an additional $1.75 for each pound the cake weighs. If a 3-pound cake and a 2.7-pound cake are bought, what is the difference in the pricing of the two cakes?
    a. $0.525 or $0.53 or 53 cents.
9. The bakery requires 2.01×10^4 grams of sugar to make all 30 vanilla and chocolate cakes this week. Over 10 years, with 52 weeks in a year, and in scientific notation, how many grams of sugar will they use if they consistently make 30 vanilla and chocolate cakes a week?

a. 1.0452×10^7 grams of sugar.

10. Viktor is working late at night and accidentally drops a cup while trying to bake a cake. The cup falls from a height of 30 inches and falls, losing 20% of its original height each bounce. After *about* how many bounces will the cup stop falling and allow Viktor to recover from his embarrassment?
    a. 15.24, about 15, 16 (all answers are acceptable)