

SAT and ACT Combo Test: Answer Explanations

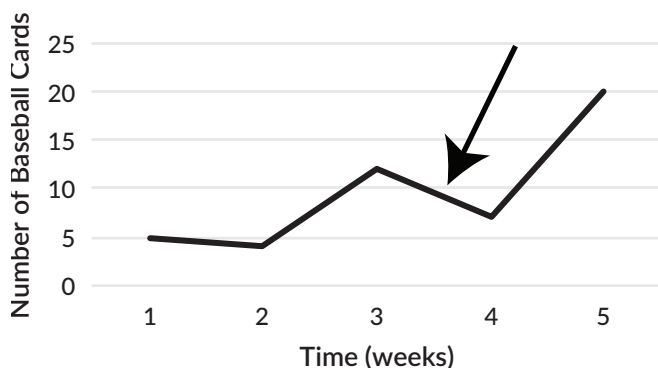
*Heather Krey, M.Ed.
Director, Test Prep for Success*



Section 8 – SAT Math Test

14 minutes, 10 questions

1. The number of Jorge's baseball cards decreases the most where there is the longest, steepest negative slope. (If you have trouble identifying where the slope is negative, imagine you are walking on this graph from left to right. When you are going downhill, the slope is negative.)



The correct answer is C.

2. For this problem, pay close attention to the fact that x = large omelets and y = small omelets. The total of 40 omelets means that your first equation is $x + y = 40$. Your second equation will be about the total number of eggs: three for each large omelet, two for each small omelet, and 103 total.
- $$3x + 2y = 103.$$

The correct answer is A.

3. If you have taken Chemistry, you'll recognize the method for this problem as stoichiometry.

$$67,000 \frac{\text{miles}}{\text{hour}} \left(\frac{1609 \text{ meters}}{1 \text{ mile}} \right) \left(\frac{1 \text{ hour}}{3600 \text{ seconds}} \right) = 29945.278 \frac{\text{meters}}{\text{second}}$$

Try to remember that 1 hour has 3600 seconds. That knowledge often will make these problems one step shorter. Once you have the conversion factors set up, multiply all the numerators, then divide by all the denominators to get your answer. Double check that the question stem allows for rounding. (It does because of the word "closest.") **The correct answer is B.**

4. A rational expression is undefined when the denominator is zero, so set the denominator equal to zero, factor, and solve.

$$x^2 - 10x - 24 = 0$$

$$(x - 12)(x + 2) = 0$$

$$x = 12 \text{ or } x = -2$$

12 is available as an answer, so that's the one to pick! **The correct answer is D.**

5. When you have to find a probability based on a table like this, build a fraction. The denominator originates in the phrase “if the student did not attend the study group.” According to the table, 41 students didn’t attend the study group, so that’s your denominator. The numerator comes from the phrase “he or she did not earn an A.” 32 students didn’t attend the group and didn’t earn the A, so that’s your numerator.

The correct answer is C.

6. Use the chart to find the amount of money in Amina’s account in 2013 (\$1000) and 2016 (\$1500). Next, use the formula

$$\%change = \frac{|old - new|}{old} \times 100\%$$

$$\text{For Amina, } \frac{|1000 - 1500|}{1000} \times 100\% = 50\%.$$

The correct answer is C.

7. This question asks about valid sampling methods. What you need to know is that people who are asked to take part in a survey must be randomly selected. Furthermore, every member of the population to which you want to generalize your conclusions must have a chance of being selected. Ryan wanted to generalize his conclusions to all the adults in the town, but he only asked people whom he found at a gym. This sampling method definitely gives biased results. **The correct answer is D.**

8. When you look at the graph of a function, the minimum value is the y-coordinate of the very lowest point. In this question, the minimum of $f(x)$ is -2 , so $z = -2$. Use the table below for the next step. Look up -2 in the x column (input) and you’ll see a 2 in the $g(x)$ column (output). **The correct answer is D.**

9. For this problem, write the equation $2500 - (12 \times 120) = 1060$.

The correct answer is 1060.

10. Use any of the rows from the table (except the first one) to plug $V(m)$ and m into the function and solve for b . The easiest row to use is the third, because it will give you an exponent of 1.

$$V(m) = 12000(1 - b)^{\frac{m}{12}}$$

$$8400 = 12000(1 - b)^{\frac{12}{12}}$$

$$0.7 = (1 - b)^1$$

$$0.3 = b$$

To check this answer, test some of the other rows with the value of 0.3 substituted into the function.

The correct answer is 0.3 or 3/10.