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Online Homework

Focused Exercises for Math SAT

Skill Set 27: Odd/ Even Numbers

Many of the problems in this exercise set came from The College Board, writers of the SAT exam.

1. If x , y , and z are positive integers such that the value of $x + y$ is even and the value of $(x + y)^2 + x + z$ is odd, which of the following must be true?
- (A) x is odd.
 - (B) x is even.
 - (C) If z is even, then x is odd.
 - (D) If z is even, then xy is even.
 - (E) xy is even.
2. If a and b are odd integers, which of the following must also be an odd integer?
- I. $(a+1)b$
 - II. $(a + 1) + b$
 - III. $(a + 1) - b$
- (A) I only
 - (B) II only
 - (C) III only
 - (D) I and II
 - (E) II and III
3. A computer program randomly selects a positive two-digit integer. If the integer selected is odd, twice that integer is printed. If the integer selected is even, the integer itself is printed. If the integer printed is 26, which of the following could have been the integer selected?
- I. 13
 - II. 26
 - III. 52
- (A) I only
 - (B) II only
 - (C) I and II only
 - (D) I and III only
 - (E) I, II, and III
4. If t represents an odd integer, which of the following expressions represents an even integer?
- (A) $t + 2$
 - (B) $2t - 1$
 - (C) $3t - 2$
 - (D) $3t + 2$
 - (E) $5t + 1$

5. If k is a positive integer, which of the following must represent an even integer that is twice the value of an odd integer?
- (A) $2k$
 - (B) $2k + 3$
 - (C) $2k + 4$
 - (D) $4k + 1$
 - (E) $4k + 2$
6. If every digit of a whole number is either a 3 or a 5, then the number must be
- (A) prime
 - (B) odd
 - (C) even
 - (D) divisible by 3
 - (E) divisible by 5
7. The sum of ten positive odd integers is 22. Some of these integers are equal to each other. What is the greatest possible value of one of these integers?
- (A) 21
 - (B) 13
 - (C) 11
 - (D) 9
 - (E) 7
8. If a is an even integer and b is an odd integer, which of the following must be even?
- (A) $ab + 1$
 - (B) $a^2 + 3$
 - (C) $a^2 + b^2$
 - (D) $a^2b^2 + 1$
 - (E) $b^2 + 3$
9. The sum of the positive odd integers less than 50 is subtracted from the sum of the positive even integers less than or equal to 50. What is the resulting difference?
- (A) 0
 - (B) 25
 - (C) 50
 - (D) 100
 - (E) 200