Answer Key: SAT Practice Test - Math Section

Section 1: SAT Math Section

1. What is the area of the triangle in the figure above?

   b: 7.5

2. The weights of 10 bags of apples range from 2.75 pounds to 3.15 pounds. If w is the weight, in pounds, of one of these bags, which of the following must be true?

   b: $|(w - 2.95)| \leq$ to 0.2

3. Four distinct lines lie in a plane, and exactly two of them are parallel. Which of the following could be the number of points where at least two of the lines intersect?
   I. Three
   II. Four
   III. Five

   d: I and III only

4. In the figure above, the length of line **AB** is **2x** and the length of line **BC** is **3x**. If a point is chosen at random from line **AC**,what is the probability that the point will lie on line **BC**?

   c: 3/5

5. The length of rectangle S is twenty percent longer than the length of rectangle R, and the width of rectangle S is twenty percent shorter than the width of rectangle R. The area of rectangle S is

   d: 4% less than the area of rectangle R

6. The stopping distance of a car is the number of feet that the car travels after the driver starts applying the brakes. The stopping distance of a certain car is directly proportional to the square of the speed of the car, in miles per hour, at the time the brakes are first applied. If the car's stopping distance for an initial speed of 20 miles per hour is 17 feet, what is its stopping distance for an initial speed of 40 miles per hour?

   d: 68 feet

7. In the figure above, all intersecting sides of the polygon meet at right angles. What is the area of the polygon?

   d: 98

8. Which of the following could be the equation of the function graphed in the xy-plane above?

   d: $y = |(x^2 - 1)|$

9. The population of Norson, the largest city in Transitania, is 50 percent of the rest of the population of Transitania. The population of Norson is what percent of the entire population of Transitania?

   d: 33 and (1/3)%

10. If **$x/3 = x^2$** , the value of **x** can be which of the following?
    I. - 1/3
    II. 0
    III. 1/3

    d: II and III only

11. The least number of marbles one would need in order to place 4 marbles on each line of the figure above is

    b: 10

12. Miguel is 180 centimeters tall. At 2:00 p.m. one day, his shadow is 60 centimeters long, and the shadow of a nearby fence post is t centimeters long. In terms of t, what is the height, in centimeters, of the fence post?

    c: 3t

13. All numbers divisible by both 4 and 15 are also divisible by which of the following?

    a: 6

14. In the figure above, inscribed triangle **ABC** is equilateral. If the radius of the circle is **r**, then the length of arc **A X B** is

    a: (2πr) / 3

15. In an 8-gram solution of water and alcohol, the ratio by mass of water to alcohol is 3 to 1. If 12 grams of a solution consisting of 2 grams water for each gram of alcohol is added to the 8-gram solution, what fraction by mass of the new solution is alcohol?

    b: 3/10

16. Ten cars containing a total of 32 people passed through a checkpoint. If none of these cars contained more than 4 people, what is the greatest possible number of these cars that could have contained exactly 2 people?

    d: Four

17. On the line above, if AB < BC < CD < DE, which of the following must be true?

    b: AC < CE

18. At Central High School, the math club has 15 members and the chess club has 12 members. If a total of 13 students belong to only one of the two clubs, how many students belong to both clubs?

    c: 7

19. If $x^{-2} = 16$, what is the value of x^2?

    a: 1/16

20. The table above shows the attendance at the home games of the Central High School football team. If the median attendance for the five games was 456, and no two games had the same attendance, what is the greatest possible value for n?

    b: 455

21. If N . (5/14) = (5/14) (7/9), then N =

    a: 7/9

22. If $(t - 2)^2 = 0$, what is the value of (t+3) . (t+6)?

    a: 40

23. $$y = -2x^2 + bx + 5$$

    In the xy-plane, the graph of the equation above assumes its maximum value at x = 2. What is the value of b?

    d: 8

24. The graph above shows the distribution of the number of days spent on business trips in 2010 by a group of employees of Company W. Based on the graph, what is the median number of days spent on business trips in 2010 for these employees?

    a: 22

25. In the ***xy-plane***, line l is perpendicular to the graph of the **f(x) = 5x - 2**. Line l could be the graph of which of the following functions?

    b: g(x) = -(1/5)x