SAT2-MATHEMATICS Q&As

SAT Section 2: Mathematics

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QUESTION 1

What is the next number in the series below? 3 16 6 12 12 8

A. 4

B. 15

C. 20

D. 24

E. 32

Correct Answer: D

This series actually has two alternating sets of numbers. The first number is doubled, giving the third number. The second number has 4 subtracted from it, giving it the fourth number. Therefore, the blank space will be 12 doubled, or 24.

QUESTION 2

$$y = \frac{x+6}{x^2+7x-18}$$

The equation is undefined when

A. –9.

B. –2.

C. –6.

D. 0.

E. 9.

Correct Answer: A

An equation is undefined when the value of a denominator in the equation is equal to zero. Set x 2?7x +18 equal to zero and factor the quadratic to find its roots:

$$x^2+7x-18=0$$
$$(x+9)(x-2)=0$$
$$x=-9,\ x=2$$

QUESTION 3

What two values are not in the domain of

$$y = \frac{x^2 - 36}{x^2 - 9x - 36}?$$

A. –3, 12

B. 3, –12

C. –6, 6

D. –6, 36

E. 9, 36

Correct Answer: A

QUESTION 4

SIMULATION

For any whole number x>0, how many elements are in the set that contains only the numbers that are multiples AND factors of x?

A. 1

Correct Answer: A

The largest factor of a positive, whole number is itself, and the smallest multiple of a positive, whole number is itself. Therefore, the set of only the factors and multiples of a positive, whole number contains one element -- the number itself.

QUESTION 5

A sack contains red, blue, and yellow marbles. The ratio of red marbles to blue marbles to yellow marbles is 3:4:8. If there are 24 yellow marbles in the sack, how many total marbles are in the sack?

A. 45

B. 48

C. 72

D. 96

E. 144

Correct Answer: A

The number of yellow marbles, 24, is 24/8=3 times larger than the number of marbles given in the ratio. Multiply each number in the ratio by 3 to find the number of each color of marbles. There are 3(3) = 9 red marbles and 4(3) = 12 blue marbles. The total number of marbles in the sack is 24 + 9 + 12 = 45.