SAT Prep

1. If \( m \) is an integer, which of the following could not equal \( m^3 \)?
   a. 27  b. 0  c. 1  d. 16  e. 64

2. If \( n \) is divided by 7 the remainder is 3. What is the remainder if \( 3n \) is divided by 7?
   a. 2  b. 3  c. 4  d. 5  e. 6

3. What is the slope of the line passing through the point \((-3, -1)\) and the origin?
   a. \(-3\)  b. \(-\frac{1}{3}\)  c. 0  d. \(\frac{1}{3}\)  e. 3

4. If \( x = 2y + 3 \) and \( 3x = 7 - 4y \), what does \( x \) equal?
   a. \(-5\)  b. \(-\frac{1}{3}\)  c. \(\frac{13}{5}\)  d. \(\frac{2}{3}\)  e. 15

5. A bag contains a number of marbles of which 35 are blue, 16 are red and the rest are yellow. If the probability of selecting a yellow marble from the bag at random is \(\frac{1}{4}\), how many yellow marbles are in the bag?
   a. 4  b. 17  c. 19  d. 41  e. 204

6. If \( n > 0 \) and \( 16x^2 + kx + 25 = (4x + n)^2 \) for all values of \( x \), what does \( k - n \) equal?
   a. 0  b. 5  c. 35  d. 40  e. 80

7. A rectangular solid has two faces congruent to the figure labeled I at right and four faces congruent to the figure labeled II at right. What is the volume of the solid?

8. In the figure at right, \( PQ = QR \). What is the \(x\)-coordinate of point \( Q \)?

9. The time \( t \), in hours, needed to produce \( u \) units of a product is given by the formula \( t = ku + c \), where \( k \) and \( c \) are constants. If it takes 430 hours to produce 100 units and 840 hours to produce 200 units, what is the value of \( c \)?

10. In the figure at right, a square is inscribed in a circle. If the sides of the square measure \(\sqrt{3}\) and the area of the circle is \(c\pi\), what is the exact value of \( c \)?
Answers

1. D
2. A
3. D
4. C
5. B
6. C
7. 250
8. 5
9. 20
10. 1.5