### SAT Prep

1. If \( b + 4 = 11 \), then \((b - 2)^2 = \)
   
   a. 16  
   b. 25  
   c. 36  
   d. 49  
   e. 64

2. Let \( P \) and \( Q \) represent digits in the addition problem shown at right. 
   
   \[
   \begin{array}{c}
   25P \\
   + P4 \\
   \hline 
   32Q 
   \end{array}
   \]
   
   What must the digit \( Q \) be?
   
   a. 0  
   b. 1  
   c. 2  
   d. 3  
   e. 4

3. If \( 3^4 = 9^x \), then \( x = \)
   
   a. 2  
   b. 3  
   c. 5  
   d. 8  
   e. 10

4. When a positive number \( n \) is divided by 7 the remainder is 6. Which of the following expressions will yield a remainder of 1 when it is divided by 7?
   
   a. \( n + 1 \)  
   b. \( n + 2 \)  
   c. \( n + 3 \)  
   d. \( n + 4 \)  
   e. \( n + 5 \)

5. How many 4-digit numbers have the thousands digit equal to 2 and the units digit equal to 7?
   
   a. 100  
   b. 199  
   c. 200  
   d. 500  
   e. 10005

6. In the figure at right, where \( x < 6 \), what is the value of \( x^2 + 36 \)?
   
   a. 10  
   b. 50  
   c. 100  
   d. 600  
   e. 1296

7. The measures of the angles of a triangle in degrees can be expressed by the ratio 5:6:7. What is the sum of the measures of the two larger angles?
   
   a. 110  
   b. 120  
   c. 130  
   d. 160  
   e. 180

8. If \( \frac{\xi}{3} = \frac{7}{10} \), what is the value of \( r \)?
9. If \( p \) and \( q \) are two different prime numbers greater than 2, and \( n = pq \), how many positive factors, including 1 and \( n \), does \( n \) have?

10. If \( \frac{1}{2} \left( 30x^2 + 20x^2 + 10x + 1 \right) = ax^3 + bx^2 + cx + d \), for all values of \( x \) where \( a, b, c, \) and \( d \) are all constants, what is the value of \( a + b + c + d \)?

**Answers**

1. B
2. A
3. A
4. B
5. A
6. B
7. C
8. \( r = 2.1 \)
9. 4
10. 30.5