1. In the rectangle $ABCD$ at right, the area of the shaded region is given by $\frac{\pi \cdot l \cdot w}{6}$. If the area of the shaded region is $7\pi$, what is the total area, to the nearest whole number, of the unshaded regions of the rectangle $ABCD$?
   a. 14  
   b. 15  
   c. 20  
   d. 22  
   e. 25

2. Consider the following equations:
   \[
   a = p^3 - 0.61 \\
   b = p^2 - 0.61 \\
   c = (p - 0.61)^2
   \]
   If $p$ is a negative integer, what is the ordering of $a$, $b$, and $c$ from least to greatest?
   a. $c < a < b$  
   b. $a < c < b$  
   c. $b < a < c$  
   d. $a < b < c$  
   e. $c < b < a$

3. The figure at right represents six offices that will be assigned randomly to six different employees, one employee per office. If Maryanne and Ginger are two of the six employees, what is the probability that they will be assigned an office indicated with an *?
   a. $\frac{1}{6}$  
   b. $\frac{1}{8}$  
   c. $\frac{1}{15}$  
   d. $\frac{2}{15}$  
   e. $\frac{1}{30}$

4. Raul needed wire pieces 7 inches long. He cut as many as he possibly could from a wire 6 feet long. What is the total length of the wire that is left over?
   a. 2 inches  
   b. 3 inches  
   c. 4 inches  
   d. 5 inches  
   e. 8 inches

5. The $n^{th}$ term of a sequence is defined to be $5n + 2$. The $35^{th}$ term is how much greater than the $30^{th}$ term?
   a. 5  
   b. 18  
   c. 25  
   d. 36  
   e. 40

6. Matilda remembers only the first four digits of a seven-digit phone number. She is certain that none of the last three digits is zero. If she dials the first four digits, then dials the last three digits randomly from the non-zero digits, what is the probability that she will dial the correct number?

7. Let $a \triangle b$ be defined as $\frac{1}{a} + b$ where $a \neq 0$. What is the value of $6 \triangle 7$?
8. If \(4xy + 1 = 1\), what is the value of \(xy\)?

9. Eight consecutive integers are arranged in order from smallest to the largest. If the sum of the first four integers is 206, what is the sum of the last four integers?

10. If the points \(A(4, 1), B(4, 8),\) and \(C(-3, 8)\) form the vertices of a triangle, what is the area of the triangle?

**Answers**

1. C
2. D
3. C
4. A
5. C
6. \(\frac{1}{729}\)
7. \(\frac{43}{6}\)
8. 0
9. 222
10. 24.5