1. What is the ones (units) digit of $2019^2 - 2018^2$?
   a. 1  b. 3  c. 5  d. 7

2. What is the area in the first quadrant bounded by the graph of $x + 2y = 4$ and the $x$- and $y$-axes?
   a. 1  b. 2  c. 4  d. 8

3. Let $f(x) = x^2 + 7$. What is $f(f(2))$?
   a. 11  b. 107  c. 121  d. 128

4. The radius of a sphere is 6 cm. What is the sphere's volume divided by its surface area (ignore units)?
   a. 1.5  b. 2  c. 2.5  d. 3

5. Which of the following is the closest integer to the cube of $\tan(\pi/3)$? ($\pi/3$ is in radians, not degrees)
   a. 5  b. 6  c. 7  d. 8

6. Let $n$ represent a positive integer greater than 1. The number of points of intersection of the graphs of $y = x^n$ and $y = nx$ is
   a. always odd  b. always even  c. odd when $n$ is even and even when $n$ is odd
   d. even when $n$ is even and odd when $n$ is odd

7. On a flat surface, a bug walks 1 foot north, 2 feet west, 3 feet south, 4 feet east, 5 feet north, and 6 feet west. It then walks straight back to its original starting point. How far did the bug walk total, in feet?
   a. 21  b. 24  c. 26  d. $21 + \sqrt{5}$

8. Double the sum of the first 1,111 positive integers and subtract 1,111. What is the result?
   a. 616,605  b. 1,234,321  c. 1,423,231  d. 1,432,231

9. Suppose $\log_{10} 8 = r$ and $\log_{10} 9 = s$. What is $\log_{10} 5$ in terms of $r$ and/or $s$?
   a. $\sqrt[3]{r} + \sqrt{s}$  b. $(\sqrt[3]{r})(\sqrt{s})$  c. $(r/3) + (s/2)$  d. $1 - (r/3)$

10. Which of the following is closest to the number of ordered pairs of points $(m, n)$, where $m$ and $n$ are both between 1 and 100 inclusive and relatively prime (their greatest common divisor is 1)? [(2,3) and (3,2) count as two such points.]
    a. 5,000  b. 6,000  c. 7,000  d. 8,000