

## TMC 2006 MATH – BOWL

### Round 11

#### Questions

#### Answers

1. What is the sum of all integers  $n$  satisfying  $0 \leq n \leq 3\pi$ ? 45
2. Which of the following is not a Platonic Solid?  
Hexahedron, Icosahedron, Octahedron, Dodecahedron Hexahedron
3. What is the inverse function of the natural log of  $x$ ?  $e^x$
4. The perimeter of a regular hexagon is 78. What is the length of one side of the hexagon? 13
5. How many positive integers between 19 and 79 are multiples of 5? 12
6. Find the probability of selecting a four member committee of all women from a group of 4 men and 6 women.  $\frac{1}{14}$  or 1 in 14
7. What is the greatest common divisor of 60 and 90 and 115? 5
8. John received in change pennies, nickels, and quarters totaling \$2.33. What is the minimum numbers of the coins he could have received? 13
9. How many of the first 9 natural numbers can be expressed as a sum of two distinct prime numbers? 4
10. An isosceles trapezoid has vertices  $(-2,1)$ ,  $(2,1)$ ,  $(5,-1)$ , and  $(-5,-1)$ . Find the measure of each diagonal.  $\sqrt{53}$

#### Tie Breakers

1. If two angles are complementary, then what is twice the sum of these angles in radian measure?  $\pi$
2. What is the greatest common divisor of 60 and 90 and 150? 30