TMC – 2006– MATH BOWL

Round 5 **Questions** **Answers**

1. The _____ is awarded every four years on the occasion of the International Congress of Mathematicians to recognize outstanding mathematical achievement for existing work and for the promise of future achievement.

   Fields Medal

2. What is the least common multiple of 72 and 54? 216

3. What is the largest prime factor of 203? 29

4. The perimeter of a rectangle is 50 and its length is 4 times its width. What is the width of the rectangle? 5

5. For what x is the absolute value of $x+2$ less than 4?

   $-6 < x < 2$ or open interval $(-6, 2)$ or all x (strictly) between -6 and 2

6. Jill played tennis for $1\frac{1}{2}$ hour on Saturday and for $\frac{5}{6}$ hour on Sunday.

   How many more hours did Jill play tennis on Saturday than on Sunday? $\frac{2}{3}$

7. How many two digit numbers contain no 4 in them? 72

8. What is the volume of a cone of base diameter 4 and height 6? 8π

9. There are cows and chickens in a field. If I count 40 heads and 134 feet, how many chickens are in the field? 13

10. The average of two numbers is 6 and their difference is 14. What are the numbers? -1 and 13 (any order)

Tie Breakers

1. How many nonempty subsets are there of a set with 8 elements? 255

2. What is the largest number of points in which four distinct circles can intersect each other? 12

3. If the diameter of a sphere is doubled, by what factor does its volume increase? 8