



WSMA Math Bowl – March 7, 2015

MS Time Attack

1	On Monday, Andrew did 5 pull-ups. Every day, he wants to do twice as many pull day before. On what day will he do 10240 pull-ups?
2	If the longer leg of a right triangle is 96 and the hypotenuse is 92 smaller than twice the length of the longer leg, what is the value of the length of the shorter leg times the length of the hypotenuse divided by 4?
3	If the ratios of the angles in a triangle are $3x: 4x: 5x$, then what is the value of the largest angle of the triangle?
4	Evaluate $256^{(1/4)}$.
5	What is the area of a triangle with side lengths 10, 10, 16?
6	What is the value of $f(5)$ in the equation $f(x) = x^2 - 12x + 36$?
7	Express 1357 base 8 in base 10.
8	$(-A+6)/4 + (5/6) = 3/2$ Find the value of A.
9	Express in fraction form $2^{10} \times 2^{(-20)}$.
10	In a soccer tournament, there are 32 teams. There are 4 teams in each group, and there are 8 groups in total. After each team in each group plays each other once, the top 2 teams in each group advances to the round of 16. In this round each team plays exactly one other team. After they decide a winner for each of the games in the round of 16, the winning team advances to the round of 8. This process continues 2 more times until there are 2 teams that made it into the finals, and all the other teams eliminated. How many total games are played?
11	Which quadrant does the line $y=5x+12$ not pass through?
12	What is the sum of the factors of 2015?
13	What is the average of 12.37, 12.61, 12.78, 12.98, and 13.76?
14	What is 2015 times 1985?

15	Solve for x in this equation: $2^{2015}-2^{2014}= 2^x$
16	What is the sum of the infinite geometric sequence $16+8+4+2+1+0.5...?$
17	The four distinct lines of symmetry in a square are drawn. Including triangles of different area, how many triangles are there in total?
18	How many ways are there of arranging the word COLLEGE?
19	Three sandwiches cost \$15.66. How much do seven sandwiches cost?
20	Find the value of x in the following equation: $X^3-6x^2+12x=8$
21	Find the value of x if $(2^{2015}+2^{2015})/(2^{2031})=1/x$
22	What is the value of $\frac{3}{2} \times \frac{4}{3} \times \frac{5}{4} \times \frac{6}{5} \times \frac{7}{6} \times \dots \times \frac{2016}{2015}$?
23	Find the value of ${}_{15}C_9$.
24	If $a+(1/a)= \text{square root } 3$, find $a^2+(1/a^2)$