



Knights of Pi Math Tournament – December 20th,
2014

Mental Math 7th/8th

Person 1

1	Evaluate the following: two to the power of two, times three to the power of three [$2^2 * 3^3$]
2	If Joe goes to Pizza Hut and wishes to order a pizza, and he has 4 toppings, 3 crusts, and 8 cheeses to choose from, how many selections can he make given that he must have 1 topping, 1 crust and 1 cheese?
3	Alex takes a rectangle and rotates it about one of its sides in 3-d space. What solid geometric figure is traced out?
4	What is the sum of the following numbers: 3, 1, 81, 9, 27?
5	The Log of 2 is about 0.301. The population of Newport increases tenfold every 30 years. In how many years will Newport's population double rounded to the nearest year?

Person 2

1	You toss three standard six-sided die. What is the expected sum of the numbers on the die?
2	Find the sum as an improper fraction: $\frac{4}{5} + \frac{8}{7}$.
3	How many vertices does a tetrahedron have?
4	Find the slope of the line that travels through (3,4) and (5,1).
5	Find the greatest common factor of 91 and 78.

Person 3

1	Find half of 5238.
2	Evaluate $45 * 46$.
3	Find the sum of $1+2+3+4+...+21$.
4	Evaluate: 6 factorial.

5	What is the cube root of 125?
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Person 4

1	Simply $4a + 6b + 2b + 8a$ in terms of a and b.
2	Evaluate negative four times the quantity (two minus five times negative two) $[-4 * (2 - 5 * 2)]$.
3	What is the sum of the first 5 prime numbers?
4	How many numbers are greater than 13 but less than or equal to 25?
5	Solve for t: $3 > 6 + 9(-2)t$ [three is greater than six plus nine times negative two times t.]