



Knights of Pi Math Tournament – Dec. 12, 2015
Mental Math 7th/8th

Person 1

1	What is the sum of the first 7 odd integers?
2	What is 5 squared plus 4 squared plus 3 squared?
3	In how many ways can the word KAPPA, spelled K-A-P-P-A, be uniquely rearranged?
4	If x squared is y , and y cubed is z , and z equals 64, what is the positive value of x ?
5	What is the sum of the prime numbers between 10 and 20?

Person 2

1	Calculate the sum of all of the positive integer factors of 6.
2	If a equals $3b$ and b equals $2c$, what is a in terms of c ?
3	What is the volume of a rectangular prism with dimensions 3 by 4 by 5?
4	What is 4 factorial times 3 factorial divided by 6?
5	Find the number of integers between 1 and 15, inclusive, that are not divisible by 2, 3, or 5.

Person 3

1	Frank is pushing a rock up a hill. Starting from day 1, on every odd-numbered day, Frank pushes the rock up 4 feet, and on every even-numbered day, the rock rolls back down 2 feet. If Frank needs to push the rock up 40 feet to reach the top of the hill, on which day will he achieve this?
2	What is the sum of the greatest common factor and least common multiple of 18 and 12?
3	Find the smallest cube number greater than 45.
4	What is the cube root of 2 to the 15th power?
5	How many distinct positive factors does 24 have?

Person 4

1	Find the units digit of 4 to the power of 2015
2	What is the sum of all the integers from 1 to 10, inclusive?
3	If a triangle has side lengths 7 and 10, what is the sum of the highest and lowest possible integer values for my third side?
4	Calculate the sum of the first 3 two-digit prime numbers.
5	Evaluate the square root of 576