



Knights of Pi Math Tournament – Jan. 7, 2017
Block Math 7th/8th

1	Find the distance between the points (4,2) and (7,-2).
2	In how many ways can you arrange the word PHYSICS?
3	If $x + 3 = 7$ and $y + 4 = 9$, what is $x^2 - 2xy + y^2$?
4	How many distinct positive factors does 1024 have?
5	In a classroom the ratio of guys to girls is 10:7. There are 51 people in each classroom. If there are 15 classes in the whole school, what is the total number of guys?
6	In a farm, there are cows and chickens. A cow has 4 legs and a chicken has 2 legs. There are a total of 23 heads and 66 legs. How many chickens are there?
7	How many 3 digit numbers are divisible by 13?
8	If $5a = b$, $2b = 3c$, and $4c = 7d$, what is $2a$ in terms of d ? Express your answer as a decimal.
9	If the number $148x43$ is divisible by 13, what is smallest possible x ?
10	A is the greatest common factor of 78 and 91. What is the least common multiple of A and 36?
11	Which is the greatest of these four: 5^{96} , 7^{72} , 9^{48} , 11^{24} ?
12	What is the sum of the units digit of 3^{83} and 7^{38} ?
13	What is 2016 base 7 expressed as in base 10?
14	Laura is dividing 2016 by 23. She sets the remainder of this as A. Sean is dividing 2017 by 29. He sets the remainder of this as B. If Laura and Sean add A and B together, what do they get?
15	Michael rolls three six-sided die. What is the probability that the sum of the three rolls is at least 14?