



Knights of Pi Math Tournament – Dec. 12, 2009
Algebra & Operations 5th/6th

1	Compute: $123 \times 123 - 423 \times 423$
2	A student scored 97% on two English tests, 89% on a history test, and 86% on three math tests. What is his average score for the 6 tests? (Express your answer as a decimal rounded to the nearest tenth)
3	If 1234 inches of rain fell in Seattle during 2007, what was the average rainfall that year in inches per minute?
4	Currently, Bob is twice as old as Billy. Six years from now, Billy's age will be $\frac{5}{6}$ of Bob's current age. What is the sum of Bob and Billy's current ages?
5	Compute: $1 \div 2 \div 3 \div 4 \div 5 \div 6 \div 7$
6	Say we create a new mathematical operator "%". If we define $(a \% b)$ as $(a + b) \times (a - b)$, then compute $(((((1 \% 2) \% 3) \% 4) \% 5) \% 6)$.
7	Evaluate these expressions and pick the largest. Express your answer as an integer. a) 2^6 b) The sum of the positive integer factors of 49 c) 3^4 d) $2009/7^2$
8	What is three times the sum of x and y ? $-30 + 2x = 30 - 2y$ $x + y - 15 = 15$
9	Evaluate as a mixed number: $\frac{2^5}{3^{\frac{1}{5}}} + 4\frac{1}{2}$
10	Solve for x : $x + y + z = 6$ $2x - y + 4z = 12$ $7x + 3y + z = 16$