MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 6 - MARCH 2017
ROUND 4 ALGEBRA 1: ANYTHING

ANSWERS

A) _____

B) (_____ , _____)

C) _____

A) Determine all ordered pairs of *positive* integers (x, y), where $y > x$, for which $x! \cdot y! = 720$.

B) 2017 is a prime number. For a unique positive integer k, $N = \sqrt{k^2 + 2017}$ is a rational number. Compute the ordered pair (k, N).

C) Compute the sum of all positive integer values of n for which the expression $\frac{25+3n}{2n-5}$ represents an integer.