MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 3 - DECEMBER 2015
ROUND 5 ALG 1: RATIO, PROPORTION OR VARIATION

ANSWERS

A) _____

B) (_____ , _____)

C) (_____ , _____)

A) Given: $x+2=y+1=a$ and $\frac{x}{y}=\frac{a}{b}$.

If $x+y=6$, compute the numerical value of *b*.

B) $\frac{2n^2+13n-24}{2n^3-8n}$ is a nonzero defined ratio.

There are *K* values that cause the ratio to be zero or undefined and the smallest value is *J*.
Compute the ordered pair (*K*, *J*).

C) For positive integers *a*, *b* and *k*, $\frac{3a+7}{b+2}=\frac{5}{6}$, when $b = ka$ and $a > 1$.

Compute the ordered pair (*a*, *b*).