MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 5 – FEBRUARY 2015
ROUND 1 ALGEBRA 2: ALGEBRAIC FUNCTIONS

ANSWERS

A) $x =$ _____

B) (_____ , _____)

C) (_____ , _____)

A) $y = f(x)$ defines a linear function with slope of $\frac{2}{3}$ and a *y*-intercept of –6.
$y = g(x)$ defines a linear function perpendicular to $y = f(x)$ with a *y*-intercept of +6.
Compute the *x*-intercepts of $y = h(x)$, given $h(x) = f(x) \cdot g(x)$.

B) If $f^{-1}(x) = \frac{1-2x}{3}$, then $8 \le f(x) \le 20$ for $a \le x \le b$. Compute the ordered pair (a,b).

C) The zeros of $y = f(x) = 3x^2 + 2x - 4$ are *u* and *v*.
The zeros of $y = g(x) = 3x^2 + bx + c$ are $2u + 3v$ and $3u + 2v$.
Compute the ordered pair (b,c).