

MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 5 - FEBRUARY 2011
ROUND 3 TRIG: IDENTITIES AND/OR INVERSE FUNCTIONS

ANSWERS

A) _____

B) _____

C) _____

******* NO CALCULATORS ON THIS ROUND *******

A) Determine the two smallest positive values of x (in degrees) for which $\sin x = \cos 110^\circ$.

B) If A is the smallest positive angle (in radians) for which $\sin 3A = -\frac{1}{2}$,
compute $\cos 12A \cos 6A$.

C) Compute $\sin\left(\operatorname{Arc}\tan\left(\frac{-2}{3\sqrt{5}}\right)\right) + \tan\left(\operatorname{Arc}\cos\left(-\frac{35}{37}\right)\right)$.