MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 4 - JANUARY 2013
ROUND 3 TRIG: EQUATIONS WITH A RESAONABLE NUMBER OF SOLUTIONS

ANSWERS

A) _____ °

B) _____

C) _____

Unless otherwise indicated, list all answers in radian measure.

A) In quadrilateral *ABCD*, $m\angle B = 60°$. If $\sin A = \sin C$, but $A \neq C$, compute $m\angle D$ (in degrees).

B) Solve for x over $0 \leq x < 2\pi$. $\tan x - \cot x = 2\cos x \csc x$

C) Find the number of solutions over $0 \leq x < 2\pi$. $\sin 3x + \sin 5x + \sin 7x = 0$