

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 2 - NOVEMBER 2007
ROUND 5 TRIG: FUNCTIONS OF SPECIAL ANGLES**

ANSWERS

A) _____

B) _____ (in degrees)

C) (_____ , _____ , _____)

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

A) Compute: $\sin 450^\circ \cot 315^\circ \tan^2 225^\circ \sin^3 \left(-\frac{7\pi}{4} \right)$

B) Solve for θ over $0^\circ \leq \theta < 360^\circ$: $\sin^2(-600^\circ) = \tan(945^\circ) \cdot \cot(405^\circ) - \sin^2(x)$

C) Solve for x over $0^\circ \leq x < 360^\circ$: $\frac{\tan x + \sqrt{3}}{1 + \sqrt{3} \cot x} = 1$