

MASSACHUSETTS MATHEMATICS LEAGUE
FEBRUARY 2005
ROUND 3 TRIG: IDENTITIES & INVERSE FUNCTIONS
ANSWERS

A) _____

B) _____

C) _____

A) If $\sec^2(x) + \tan(x) = 1$ and $\tan(x) + \csc(x) = y$ find all exact real values for y .

B) Given $\sin(\sin^{-1}(2x+1)) = \frac{5}{27x+3}$ find exact values for all possible x .

C) Given $\cos^{-1}(\cos(2x+1)) = \frac{5}{x+2}$ find all possible rational values for x .