MASSACHUSETTS MATHEMATICS LEAGUE
DECEMBER 2005
ROUND 1 TRIG: RT ANGLE, LAWS SINES & COSINES

ANSWERS

A)_____

B)_____

C)_____

A) In triangle ABC with hypotenuse $\overline{AB}$, $\sin(\angle A)=0.28$. Find $\tan(\angle B)$, expressing your answer as a fraction $\frac{a}{b}$ with a, b relatively prime.

B) In acute ΔDEF $\sin(\angle D) = \sin(\angle F) + \frac{1}{3}$ while $EF = ED + \frac{2}{3}$

If $\sin(\angle F) = \frac{5}{9}$, find the <u>exact</u> value of EF in simplified form

C) In acute ΔABC $\cot(\angle A) = 0.75$ while $\tan(\angle B) = 2.40$ If the perimeter of ΔABC is 420, find the triangle's area.