

MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 3 – DECEMBER 2008
ROUND 1 TRIG: RIGHT ANGLE PROBLEMS, LAWS OF SINES AND COSINES

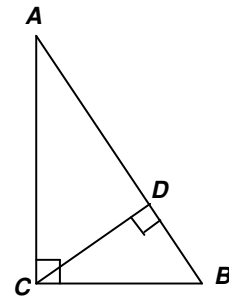
ANSWERS

A) _____

B) _____

C) _____

- A) Given: In right triangle ABC , $AB = 17$, $BC = 8$ and $\overline{CD} \perp \overline{AB}$
Compute $\sin(\angle ACD)$.



- B) In $\triangle ABC$, $a = 10$, $b = 9$ and $c = 11$
 P is an angle of $\triangle ABC$, but it is neither the largest nor the smallest angle.
As a simplified fraction, $\cos P = \frac{m}{n}$. Compute $m + n$.

- C) Let $m\angle A = 45^\circ$, $\cos B = \frac{\sqrt{3}}{2}$ and $b = 2\sqrt{2}$
Compute $a^2 + b^2 + c^2$.

