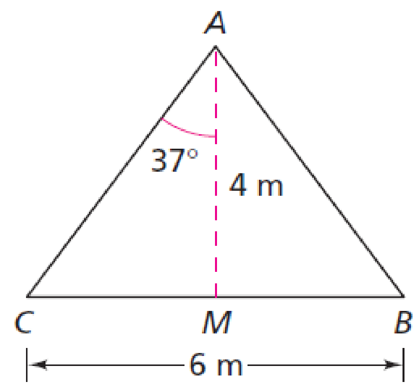
# KHM Practice 4.2

$\overline{AM}$ is on a line of symmetry for $\triangle ABC$. Some lengths and angle measures are given. Find the other lengths and angle measures.




I know that _______________ is a line of symmetry. That means that $\Delta$ AMC is a ___________________ _____________________ of $\Delta$ AMB. Since the two triangles are mirror images of each other, they are ____________________. Since the two smaller triangles are congruent, their _______________________ parts are congruent. Therefore, since m$\angle$CAM is $37°$, then _____________ also measures $37°$. Since m$\angle$CAM is $37°$ and m$\angle$BAM is also $37°$, then m$\angle$CAB is $74°$.

I also know that the _______________________ ___________ __________________ states that the interior angle sum of a triangle is _________ degrees. Since m$\angle$CAB is $74°$, that leaves __________ degrees for the other two angles of $\Delta$ ABC to share. Since $\angle$ACM and $\angle$ABM are congruent, they each have a measure of __________.

Again using the Triangle Sum Property, if m$\angle$CAM is $37°$ and m$\angle$CMA is $53°$, then m$\angle$CMA is _______ and so is m$\angle$BMA. That makes $\Delta$ AMC and $\Delta$ AMB _______________ triangles. Since the two smaller triangles are congruent, their corresponding sides are also ______________. Therefore, $\overline{CM} \cong \overline{MB}$. Since $\overline{CB}$ = 6m, $\overline{CM}$ and $\overline{MB}$ both have to measure _______.

(OVER)

I can use the ____________________________ ___________________________ to find the missing side lengths of _________________ ____________________. Since I know the length of the _________________ of the small triangles, I will be looking for the length of the ______________________. The Pythagorean Theorem states: ______________________. Since I know a and b, I am looking for c.

$a^2 + b^2 = c^2$

$\square^2 + \square^2 = c^2$

$\square + \square = c^2$

$\square = c^2$

$\sqrt{\ } = c$

$\square = c$

So $\overline{CA} = 5m$ and $\overline{BA} = 5m$ .