1. Given a triangle with \( b = 2, \ c = 5, \) and \( m\angle A = 58, \) what is the length of \( a? \) Round the answer to two decimal places.


2. Given a triangle with \( b = 3, \ c = 9, \) and \( m\angle A = 118, \) what is the length of \( a? \) Round the answer to two decimal places.


3. Given a triangle with \( b = 3, \ c = 4, \) and \( \angle A = 62^\circ, \) what is the length of \( a? \) Round the answer to two decimal places.

4. Use a calculator to find the value of \( c \) in a triangle if \( a = 20 \) mm, \( b = 25 \) mm, and \( m\angle C = 75^\circ. \) Round your answer to the nearest hundredth.

5. Find the missing side.

6. Solve triangle $ABC$ given that $a = 10$, $b = 15$, and $c = 21$.

7. Solve triangle $ABC$ given that $a = 16$, $b = 13$, and $c = 12$.

8. Use the information in the chart to find the number of degrees in the angle at Kansas City between a direct route to Boston and a direct route to Miami.

<table>
<thead>
<tr>
<th></th>
<th>Boston</th>
<th>Kansas City</th>
<th>Miami</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston</td>
<td>–</td>
<td>1251</td>
<td>1255</td>
</tr>
<tr>
<td>Kansas City</td>
<td>1251</td>
<td>–</td>
<td>1241</td>
</tr>
<tr>
<td>Miami</td>
<td>1255</td>
<td>1241</td>
<td>–</td>
</tr>
</tbody>
</table>

9. In $\triangle ABC$, $AB = 7.2$, $AC = 4.8$, $m\angle A = 84.1$. Find the measure of angles $B$ and $C$ to the nearest tenth of a degree by using the Law of Cosines to find $BC$ and then the Law of Sines to find angles $B$ and $C$. What do you notice about the sum of the angles?

10. In $\triangle ABC$, $AB = 9$, $BC = 14.1$, $AC = 12.8$. Find the measure of angle $A$ to the nearest tenth of a degree
A. in one step by using the Law of Cosines.
B. in two steps using the Law of Cosines to find angle $B$ and then the Law of Sines to find angle $A$. 
[1] C____
[2] B____
[3] 3.71
[4] 27.68 mm
[5] B____
[6] \( A = 26.0^\circ, B = 41.2^\circ, C = 112.7^\circ \)
[7] \( A = 79.5^\circ, B = 53.0^\circ, C = 47.5^\circ \)
[8] \( 60.47^\circ \)

\[ m\angle B = 35.6^\circ, \ m\angle C = 60.9^\circ; \] the angles add up to \( 180.6^\circ \), which is greater than the sum of the angles of any triangle.

[9] A. 78.5° B. 78.4°

[10] A. 78.5° B. 78.4°