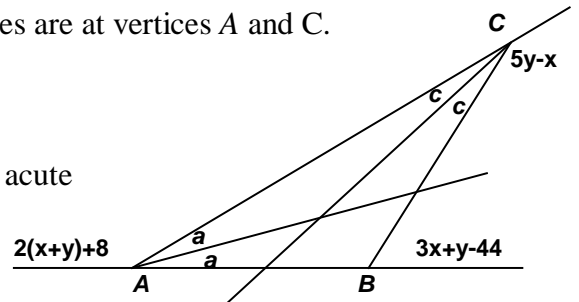**Team Round**

F) From the diagram it *appears* that the acute interior angles are at vertices A and C.
   <u>*But is this the case*</u>?
   $x + y > 41 \Rightarrow 2(x + y) + 8 > 90 \Rightarrow \angle CAB$ is acute

   $\begin{cases} x + y > 41 \\ 2(2y - x > 46) \end{cases} \Rightarrow 5y - x > 92 + 41 = 133 \Rightarrow \angle BCA$ is acute

   Thus, the interior angles at A and C are in fact acute!

$a + c + 146 = 180 \Rightarrow a + c = 34$
$\Rightarrow 2a + 2c = 68 \Rightarrow 2(x + y) + 8 + (5y - x) = 360 - 68 \Rightarrow x + 7y = 284$

The exterior angles (one at each vertex) must total 360°.
Therefore, $(2(x + y) + 8) + (5y - x) + (3x + y - 44) = 360 \Rightarrow x + 2y = 99$
Subtracting, $5y = 185 \Rightarrow y = 37, \ x = 25$.
The exterior angles are 132, 68 and **160**.