## Puzzling Triangles

Use the diagrams below to remind you of markings and their meanings:


1. In this diagram two $70^{\circ}$ angles have been labeled. Four other angles are labeled $w, x, y$ and $z$.

Complete the table below. If it is possible to work out the measure of the angle, write it down and show your method. If it is not possible, explain how you know.


| Angle | Is it possible to find the <br> measure of the angle? <br> If so, what is it? |  |
| :---: | :--- | :--- |
| $w$ |  |  |
| $x$ |  |  |
| $y$ |  |  |
| $z$ |  |  |
|  |  |  |

2. The diagram below shows two triangles, triangle $A B C$ and triangle $A C D$ :


Are the two triangles similar? Explain, step by step, how you know.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
3. The diagram below shows triangle $B C D$ within triangle $A C E$.


Are the two triangles similar? Explain, step by step, how you know.
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$\qquad$
$\qquad$
$\qquad$
$\qquad$

