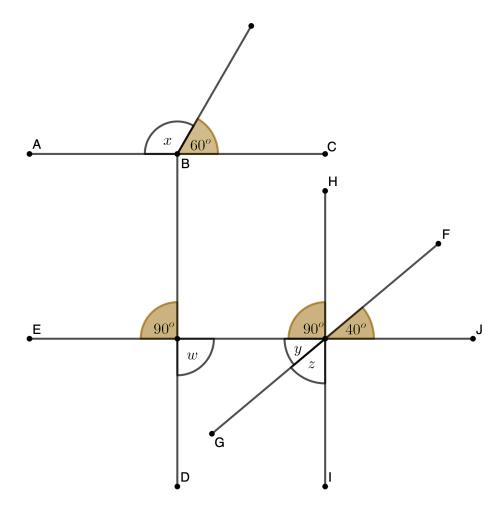
# Problem of the Week Problem B and Solution Angle Adventures

#### Problem

In the diagram below, AC, BD, EJ, HI, and FG are line segments. Determine the measure of each unknown angle w, x, y, and z.



## Solution

### Solution 1

Since  $\angle w$  is opposite to 90°, we know  $\angle w = 90^{\circ}$ .

Since  $\angle x$  supplementary to 60°, we know that  $\angle x = 180^{\circ} - 60^{\circ} = 120^{\circ}$ .

Since  $\angle y$  is opposite to 40°, we know  $\angle y = 40^{\circ}$ .

We know that  $90^{\circ} + \angle y + \angle z = 180^{\circ}$ , so we must have  $\angle y + \angle z = 90^{\circ}$ . Since  $\angle y = 40^{\circ}$ , we have  $\angle z = 50^{\circ}$ .

### Solution 2

If we measure the given angles using a protractor, we will notice that the diagram is drawn to scale. Since the diagram is drawn to scale, you may use a protractor to find the angles.