



Problem of the Week
Problem C
Locate the Fourth Vertex

Quadrilateral $BDFH$ is constructed so that each vertex is on a different side of square $ACEG$. Vertex B is on side AC so that $AB = 4$ cm and $BC = 6$ cm.

Vertex F is on EG so that $EF = 3$ cm and $FG = 7$ cm. Vertex H is on GA so that $GH = 4$ cm and $HA = 6$ cm. The area of quadrilateral $BDFH$ is 47 cm^2 .

The fourth vertex of quadrilateral $BDFH$, labelled D , is located on side CE so that the lengths of CD and DE are both positive integers.

Determine the lengths of CD and DE .

