



Problem of the Week

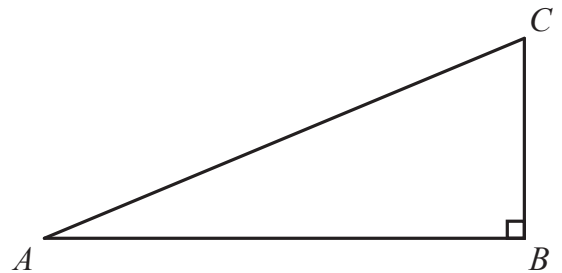
Problem E

An Inside Job

A right triangle, $\triangle ABC$, is constructed so that its base, AB , is twice its height, BC . That is, $AB = 2BC$.

A square is constructed in the following way:

- one vertex is at B ;
- a second vertex is at D , somewhere on AB between A and B ;
- a third vertex is at F , somewhere on BC between B and C ; and
- the final vertex E lies on the hypotenuse AC , between A and C .



This square, $DEFB$ is called an *inscribed* square. Determine the ratio of the area of the inscribed square $DEFB$ to $\triangle ABC$.

