Problem of the Week
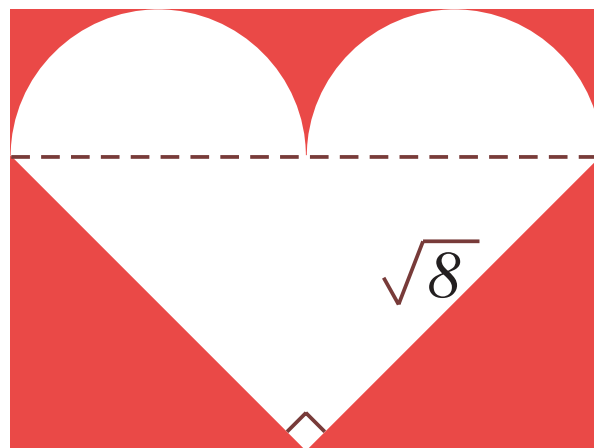## Problem D
Forever Mine Valentine

A heart is constructed by attaching two white semi-circles to the hypotenuse of an isosceles right triangle whose equal sides measure $\sqrt{8}$ cm. The new figure is then mounted onto a rectangular piece of red construction paper as shown below. (The dashed line, the side measurement and the right angle symbol will not actually be on the finished card.)

You are going to write your valentine a message in red ink on the white region of the card.

Determine the total amount of area available for your special valentine greeting.

If the solver finds this problem too straight forward, try solving POTWE "Love is Blind Valentine" as well this week. This second problem may provide a greater challenge.