

## Problem of the Week

### Problem D

#### Maximize the Area

Two rectangles,  $ABJH$  and  $JDEF$ , with integer side lengths, share a common corner at  $J$  such that  $HJD$  and  $BJF$  are perpendicular line segments. The two rectangles are enclosed by a larger rectangle  $ACEG$ , as shown.

The area of rectangle  $ABJH$  is  $6 \text{ cm}^2$  and the area of rectangle  $JDEF$  is  $15 \text{ cm}^2$ .

Determine the largest possible area of the rectangle  $ACEG$ . Note that the diagram is not intended to be to scale.

