



$$\begin{aligned} \angle ABE = \angle ABC = \angle CBF = 90^\circ \\ \angle ABF = \angle CBE = 180^\circ \end{aligned}$$

$$\begin{aligned} \angle DAC = \angle BAC + 90^\circ \\ \angle BAJ = \angle BAC + 90^\circ \end{aligned}$$

$$\begin{aligned} \angle GCA = \angle BCA + 90^\circ \\ \angle BCH = \angle BCA + 90^\circ \end{aligned}$$

$$\begin{aligned} \angle DAC = \angle BAJ \\ AD = AB \\ AC = AJ \end{aligned}$$

$$\begin{aligned} \angle GCA = \angle BCH \\ CG = CB \\ CA = CH \end{aligned}$$

$$\begin{aligned} \triangle DAC = \triangle BAJ \\ \text{Triangle Area: } \frac{1}{2} \cdot a \cdot a = \frac{1}{2} \cdot c \cdot d \\ \text{Rectangle Area: } a \cdot a = c \cdot d \end{aligned}$$

$$\begin{aligned} \triangle GCA = \triangle BCH \\ \text{Triangle Area: } \frac{1}{2} \cdot b \cdot b = \frac{1}{2} \cdot c \cdot e \\ \text{Rectangle Area: } b \cdot b = c \cdot e \end{aligned}$$

$$a \cdot a + b \cdot b = c \cdot d + c \cdot e = c \cdot (d + e) = c \cdot c$$