



The areas of triangles ADE, ABF, and CEF are proportional in the ratio of 5:4:3 to 5/8 of the area of ABCD because angles DAE, BAF, and CFE are all equal, making the altitudes of the triangles proportional also.

$$DJ:AE::BG:AF::CH:EF \text{ or } \frac{DJ}{5x} = \frac{BG}{4x} = \frac{CH}{3x}, \quad \frac{DJ}{5x} = \frac{110.400}{4x} = \frac{82.800}{3x},$$

$x=27.60$ and $DJ=138.000$

Note angle EDJ = angle ECH so DJ = CJ making K the midpoint of DC.

Angle EAF = $36^{\circ}52'12''$, as in any 3:4:5 triangle.

$$\text{Angle DAE} = \text{angle BAF} = \frac{90^{\circ} - 36^{\circ}52'12''}{2} = 26^{\circ}33'54''$$

$$AD = \cos \text{DAE} \cdot 345.000 = 308.5774$$

$$DK = \cos \text{JDE} \cdot 138.000 = 246.8619$$

The area of the rectangle is $308.577 \cdot 246.862 = 76,176.00$ sq. ft.

The area of the triangle AFE is $\frac{1}{2}(276.000)(207.000) = 28,566.00$ sq. ft.

or $28,566.00/76,176.00 = 0.375 = 3/8$