Kite in a Square - Method 3

Cut out the statements and order them to show how to find the shaded area.

The area of $\triangle DMC = 2$ sq units. The area of $\triangle DFC = 1$ sq unit. Thus the combined area of $\triangle DFE$, $\triangle CFG$ and shaded area $MEFG$ is 1 sq unit.	A
$(EH)^2 + (HF)^2 = (EF)^2$ $EH = HF$ $(EH)^2 = \frac{1}{2}(EF)^2$ $EH = \frac{EF}{\sqrt{2}}$	B
Areas of $\triangle DFE$, $\triangle CFG$ and shaded area $MEFG$ are equal so each must have an area of $\frac{1}{3}$ sq units.	C
Area of $\triangle MEF = \frac{1}{2}(1 \times EH) = \frac{1}{2}(\frac{EF}{\sqrt{2}})$	D
By Pythagoras, DF has length $\sqrt{2}$.	E
The total area of the square is 4 sq units, so the shaded area is $\frac{1}{12}$ the area of the whole square.	F
Area of $\triangle DFE = \frac{DF \times EF}{2}$ $= \frac{\sqrt{2} \times EF}{2} = \frac{EF}{\sqrt{2}}$	G
So the shaded area $MEFG$ is equal to the area of $\triangle DFE$.	H
Assume that the sides of the square are each 2 units long. Thus, DJ and FJ are each 1 unit long.	I