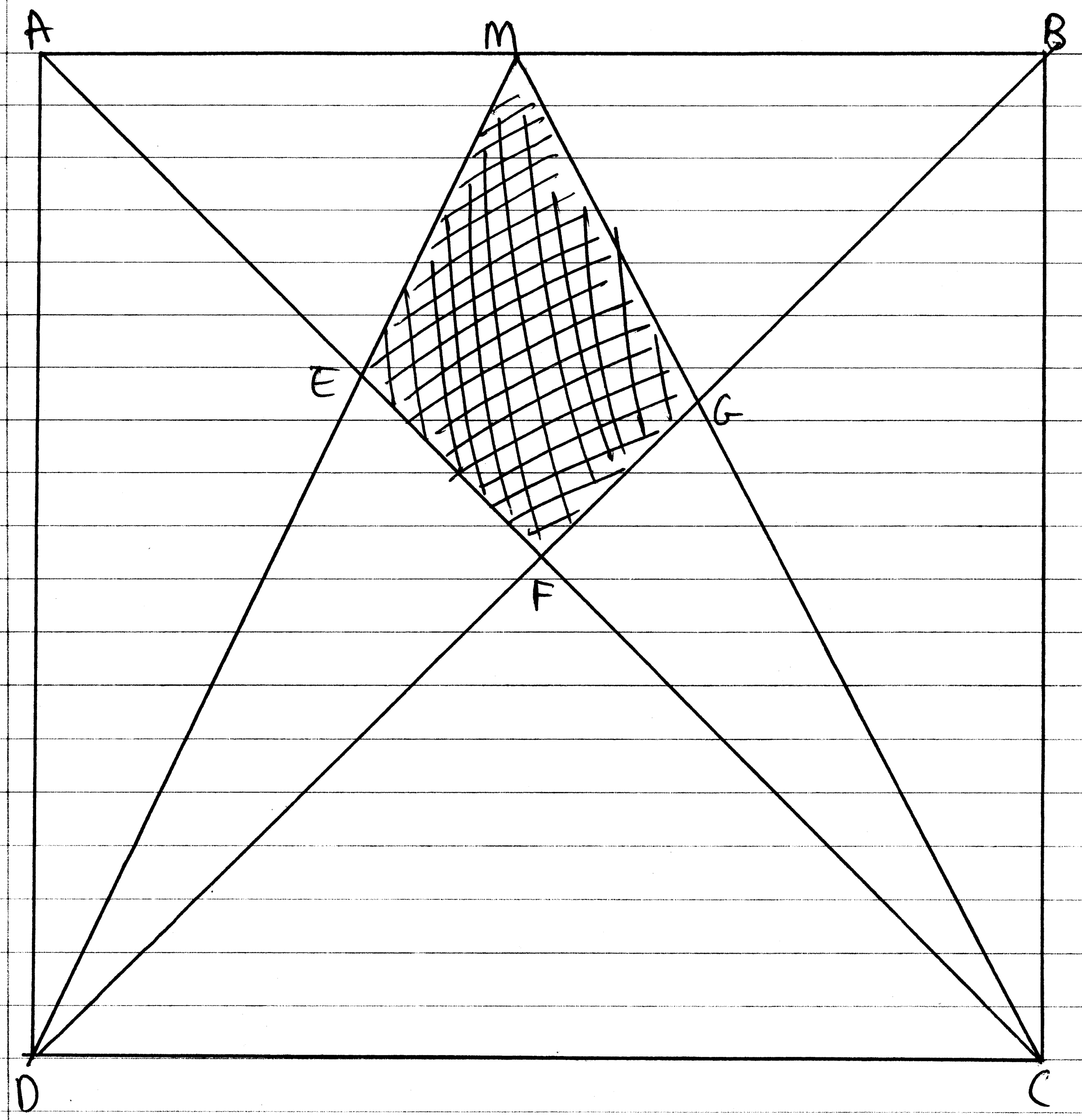

Let ABCD be a unit square. (Note also that I have labelled 3 new points: E, F and G).

Let $\Delta AED = x$ and $\Delta DEF = y$. Due to the symmetry of ABCD, $\Delta DEF = \Delta EGF$ $(= y)$, and $\Delta AED = \Delta BGC$ $(= x)$.

Lines AC and BD both divide ABCD into two equal parts. As they are also diagonals, their intersection (point F) is the midpoint of the square ABCD.

Therefore, each of the four triangles which have been created (ie ΔAFD, ΔDFC, ΔCFB and ΔBFA) are all equal in size, and therefore 1/4 of ABCD.

$\therefore x+y=\frac{1}{4}$.

So $\Delta DFC = x+y$.

As point M is defined to be the midpoint of AB, the line through M which is parallel to the side AD divides ABCD in two equal parts.

As the line DM cuts through one of these halves, $\Delta DAM = \frac{1}{4}$. As proved earlier, $x+y=\frac{1}{4}$. $\Delta AED = x$, so $\Delta DAM - \Delta AED = y = \Delta AEM$.

Due to the symmetry of ABCD, $\Delta AEM = \Delta BGM = y$.

Due to alternate angles, $\angle DCG = \angle GMB$, and $\angle CDG = \angle GBM$. Therefore, $\Delta GDC = \Delta GBM$. The length scale factor is 2, so the area scale factor is $2^2=4$.

Therefore $x+2y = 4(y)$
$\Rightarrow x = 2y$.

So the total area (not including the kite MEFG) is equal to $11y$. As proved earlier, $\Delta ABF = \frac{1}{4} ABCD = x+y$. Therefore, $MEFG = x+y-2y = 3y-2y = y$.

So the proportion of ABCD which is equal to MEFG $= \frac{y}{11y+y} = \frac{y}{12y} = \frac{1}{12}$.