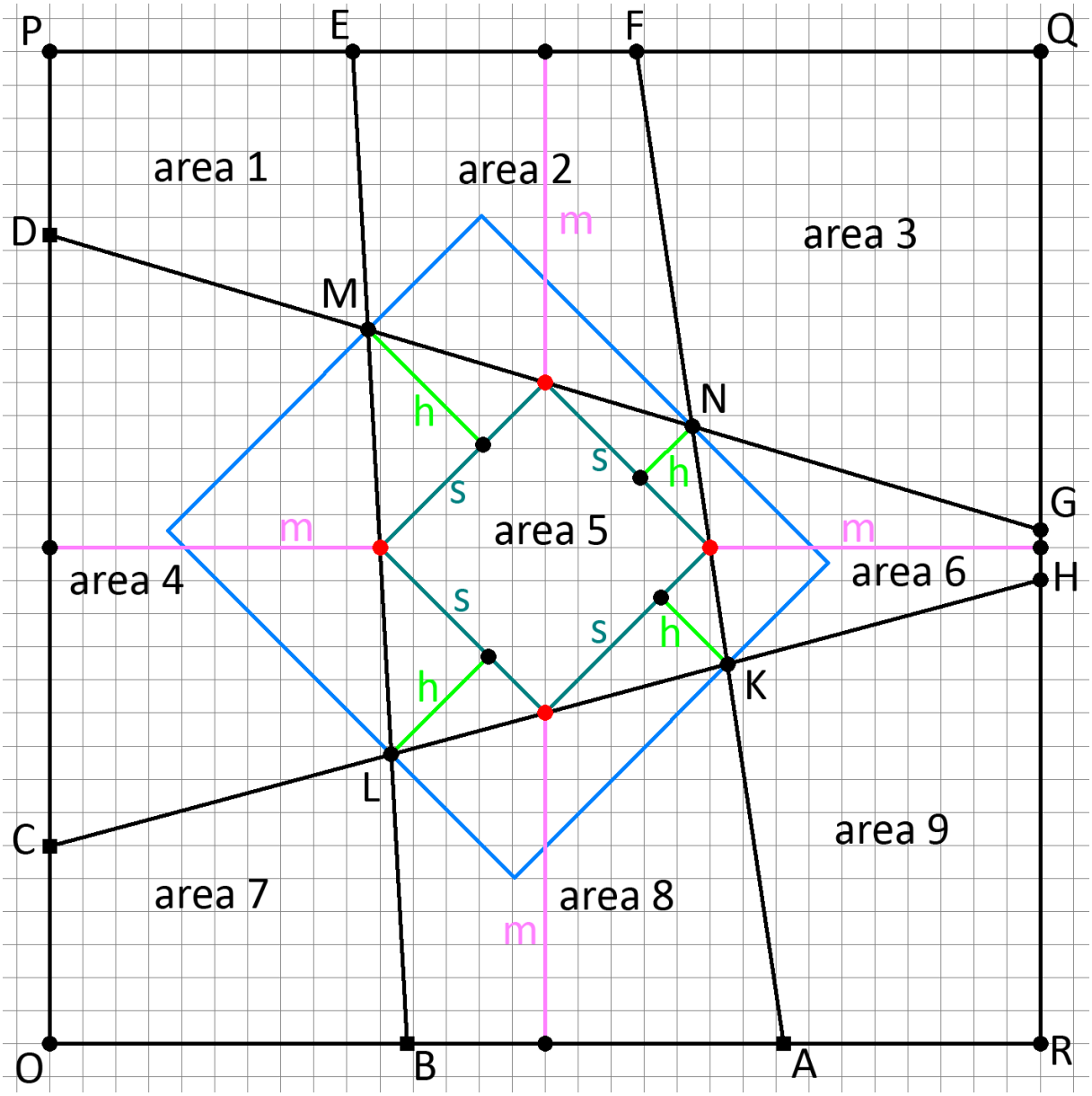
Theory of area magic squares



Say S is the magic sum, then area1 + area2 + area3 = S. The sum of all 9 areas has to be 3·S.
This means the trapezoid DGQP = area1 + area2 + area3 = S = 1/3 of the whole area.
⇒ The middle parallel m has to be 1/3 of the length of the square.
⇒ The 4 straight lines have to run through the red points. ⇔ areas make semi-magic square

In a magic square of order 3 the number of the center cell has to be 1/9 of the sum of all numbers.
⇒ area5 = KLMN = m·m = $2s^2$ (1)
KLMN = s^2 + 4 triangles = s^2 + ½ s· Σh = ½ s(2s + Σh) (2)
(1) and (2) ⇒ 2s = ½(2s + Σh) ⇔ 4s = 2s + Σh = ½ (circumference of blue rectangle) (*difficult*!)

I did not use the second criterion for the calculation. You may forget the blue rectangle. It is just a nice geometric gimmick. It is enough to know this: area5 = 1/9 of the whole area

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