If both \( p < \frac{1}{2}, \) \( q < \frac{1}{2}, \) the lattice point \((a, \beta)\) serves our purpose. Suppose then that \( q > \frac{1}{2}. \) The inequalities above yield

\[-\frac{1}{2} a < p_1 < \frac{1}{2} - \frac{1}{2} a, \quad -\frac{1}{2} < g_1 < 0,\]

and the lattice point \((a, \beta - 1)\) satisfies our requirements. If \( p > \frac{1}{2}, \) the same reasoning yields \((a + 1, \beta)\) as a suitable lattice point.

2. Our results show that in the parallelogram \( D \) formed by the lines \( u = \pm \frac{1}{2}, v = \pm \frac{1}{2} \) there is certainly a lattice point if \( 0 < ab < 1. \) When \( 0 < a < 1, 0 < b < 1, \) it is not difficult to see geometrically that this is the case. It is necessary to observe (i) that the breadth of \( D \) parallel to either axis is unity, (ii) that there is a lattice point \((a, \beta)\) in the square \( L, \) \( x = \xi \pm \frac{1}{2}, y = \eta \pm \frac{1}{2}. \) The lines \( x = \xi, y = \eta \) divide \( L \) into four squares, \( L_1, L_2, L_3, L_4 \) (numbering counterclockwise from the upper left-hand quarter). It is clear that the sides of \( D \) pass through the middle points of the sides of \( L. \) The conditions \( 0 < a < 1, 0 < b < 1 \) ensure (i) that the vertex \( u = -\frac{1}{2}, v = \frac{1}{2} \) of \( D \) lies in \( L_1, \) while the vertex \( u = \frac{1}{2}, v = -\frac{1}{2} \) lies in \( L_2; \) (ii) that \( L_2 \) and \( L_4 \) lie entirely in \( D. \) It is then immediate from a figure that one of the lattice points \((a, \beta), (a \pm 1, \beta), (a, \beta \pm 1)\) must lie in \( D. \)

3. It is possible to give another geometrical interpretation. We observe that \(|u(x, y)|\) represents the distance between \((x, y)\) and the line \( u = 0 \) measured parallel to the axis of \( x. \) Similarly \(|v(x, y)|\) is the distance between \((x, y)\) and \( v = 0 \) measured parallel to the axis of \( y. \) We seek therefore a lattice point \((a, \beta)\) such that neither of these distances exceeds \( \frac{1}{2}. \) Suppose, as we may, that \( 0 \leq \xi \leq 1, 0 \leq \eta \leq 1. \) In the case \( 0 < a < 1, 0 < b < 1, \) it is easy to see from a figure that one of the lattice points \((0, 0), (0, 1), (1, 0), (1, 1)\) must have the property desired.

CORRIGENDA: L. J. Mordell.

Some applications of Fourier series in the analytic theory of numbers*.

Page 589, equation (3·10), after "\( k > 0 " \) insert "and \( 0 < R(s) < 1, " \) and for "\( 2\pi i/k " \) read "\( 2\pi i\xi/k." \)

Page 589, equation (3·11), for "\( \int_0^\infty " \) read "\( \int_0^\infty. " \)

Add also "The evaluation of the integrals given in (3·11) is obvious when \( 0 < R(s) < 1, \) and then holds also for \( 0 < R(s) < 2 \) by the theory of analytic continuation."