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

$$-\tfrac{1}{2}a < p_1 < \tfrac{1}{2} - \tfrac{1}{2}a, \quad -\tfrac{1}{2} < q_1 < 0,$$

and the lattice point $(\alpha, \beta - 1)$ satisfies our requirements. If $p > \frac{1}{2}$, the same reasoning yields $(\alpha + 1, \beta)$ 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 $0 \leqslant ab < 1$. When $0 \leqslant a < 1$, $0 \leqslant b < 1$, 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 (α, β) 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 counter-clockwise 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 $0 \leqslant a < 1$, $0 \leqslant b < 1$ 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_3; (ii) that L_2 and L_4 lie entirely in D. It is then immediate from a figure that one of the lattice points (α, β), $(\alpha \pm 1, \beta)$, $(\alpha, \beta \pm 1)$ 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 (α, β) such that neither of these distances exceeds $\frac{1}{2}$. Suppose, as we may, that $0 \leqslant \xi \leqslant 1$, $0 \leqslant \eta \leqslant 1$. In the case $0 \leqslant a < 1$, $0 \leqslant b < 1$, 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* "$2n\pi i/k$" *read* "$2n\pi ix/k$."

Page 589, equation (3·11), *for* "$\int_{-\infty}^{\infty}$" *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."

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