so that

$$\sum_{1}^{\infty} \beta_i \leqq c.$$

The points of E are now enclosed in the open intervals α_{ij}, so that each point is inside of an infinite number of intervals, and $\phi(x)$ is defined to be the sum of all the α-intervals or parts thereof which lie to the left of x.

Thus $\phi(x)$ is monotone and can easily be shown to be absolutely continuous as follows:

If $i + j = N$ is chosen sufficiently large, the $\phi_N(x)$ formed for this finite set of intervals will be absolutely continuous and as near as we please to $\phi(x)$ for all values of x. Hence $\phi(x)$ is absolutely continuous.

If the set E is not an *inner limiting* set, the set $E'' = E + \bar{E}$, which lies inside an infinite number of α intervals, will be such a set, and $\phi(x)$ will have an infinite derivative at all the points of E'' and no others. The set E may itself be an inner limiting set, in which case $\bar{E} = 0$.

It would be interesting to determine whether all absolutely continuous functions are of the form

$$F(x) + \phi(x),$$

where $F(x)$ has limited derivates.

AUSTIN, TEXAS.

ON THE REPRESENTATION OF NUMBERS IN THE FORM $x^3 + y^3 + z^3 - 3xyz$.

BY PROFESSOR R. D. CARMICHAEL.

(Read before the American Mathematical Society, August 3, 1915.)

IF by $g(x, y, z)$ we denote the form

$$(1) \quad g(x, y, z) = x^3 + y^3 + z^3 - 3xyz$$
$$= (x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx),$$

then it is well known that

$$g(x, y, z) \cdot g(u, v, w) = g(xu + yw + zv, xv + yu + zw, xw + yv + zu).$$