H Hopf. Any continuum  if it has cord of len. 1
then it has cord of leng $\frac{1}{n}$ $n=2,3,\dots$

.. If S is a cord set + its complement is additive, then
cont. func. can be const. which has S as cord set (not nec. analytic)

Gov. Report — Hogg —

MAA did not approve By-Laws.
Visiting Lect prog. is being carried on despite loss of NSF funds.
Have some Ford Found. Funds.

Guide Lines to come out concerning accredation.
Sum meeting in Missoula, Mont.
Dues to go up to \$18. (new members \$14).
Stud membership \$9.

Moved Hogg — award Membership in MAA —
Seconded by Peglar — Passed —

Prop. of cont. func.

" " " real int → real int,

Intermediate val. theorem—

H. Fast. – Every real func. is diff. of 2 real funcs which take on every val. between 2 vals. on every interval.

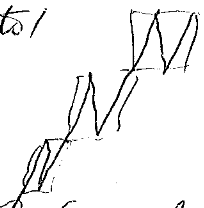
Def'n If $f(x_1) = f(x_2)$, f has <u>horizontal cord</u>.

<u>Cont. func</u> having no hori cord is monotonic.

<u>Cont func</u>. which take every val. exactly twice? none such.

D.C. Gillespie 1922 cont func f, at most 2 to 1, then it has 3 monotonic pieces

at most 3 to 1



if f is on a square, are there at most 2 to 1 funcs? unanswered.

If $f(0) = f(1)$ then it has a cord of length $\frac{1}{n}$, $n = 1, 2, 3, \cdots$

J. T. Rosenbaum: Picnic in mts take table whose legs are $\frac{1}{n}$ (length of mt.) for some n.

Let a: $0 < a < 1$, $a \neq \frac{1}{n}$ for all n.

Construct g_3 g is of period a
$g(0) = 0$, $g(1) = 1$

Now $f(x) = x - g(x)$.

$f(x+a) = (x+a) - g(x+a) = x + a - gx$

$f(x+a) - f(x) = a$.