Re: Somewhat obscure esteem

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- *Date*: Wed, 25 Jun 2008 16:23:31 +0100

On 25 Jun 2008 09:58:52 GMT, Bingo Bongo
<bigmesshumphrey66@xxxxxxxxxxx> wrote:

> Sternberg (Lectures on differential geometry) page 50 Sard's theorem proof:
> C is the unit cube in E^n_1. f:C−>E^n_2 (n_2<n_1). ||f(x)−f(y)||< (sqrt(n_2))b(h)h^q
> Now we divide C into p^n_1 cubes C_a of side 1/p. By the previous inequality we get
> that f(A_i/\C_a) (A_i is just a subset of the set of critical points for f such that
> there exists a function b(h) with b(h)−>0 if h−>0 and such that the previous inequality holds)
> lies in a ball of radius (sqrt(n_1n_2))b((sqrt(n_1))/p)(sqrt(n_1)/p)^q. Thus the total
> volume of f(A_i) is less than K(b(((sqrt(n_1))/p))^n_2)p^(n_1−qn_2)
> where K = sqrt(n_1n_2)((sqrt(n_1))^qn_2)w_n2 (w_n2 is the volume of the unit sphere in
> E^n_2.
>
> That's pretty much it, I don't get this last volume esteem.

I think the word you want is "estimate".

Just checking a couple of points:

(1) I presume h in the first inequality is a positive number such
that ||x − y|| < h?

(2) Why does sqrt(n_2) in the first inequality become sqrt(n_1n_2)
in the second? Shouldn't this just be the bound obtained from the
first inequality, taking h = sqrt{n_1}/p (= the diagonal of C_a)?

−−
Angus Rodgers
(twirlip@ eats spam; reply to angusrod@)
Contains mild peril
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