*Work supported in part by the National Research Council of Canada.

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[2]J. M. Cornwall and R. Jackiw, Phys. Rev. D 4, 367 (1971).

[3]D. A. Dicus, R. Jackiw, and V. L. Teplitz, Phys. Rev. D 4, 1733 (1971). Throughout we use the notations of this reference except where explicitly stated.

[4]Related work on light-cone algebras has been done by H. Fritzsch and M. Gell-Mann, in Proceedings of the Eighth Coral Gables Conference on Symmetry Principles at High Energies, University of Miami, 1971 (to be published), and D. J. Gross and S. B. Treiman, Phys. Rev. D 4, 1059 (1971).

[5]See, e.g., J. D. Bjorken, in *Selected Topics in Particle Physics, International School of Physics "Enrico Fermi," Course XLI*, edited by J. Steinberger (Academic, New York, 1967). Terms omitted in Eq. (1) give rise to contributions in the cross section proportional to the lepton mass and are ignored here.

[6]We here correct a sign error of Ref. 3 and use the conventional W_2 in terms of which the electroproduction cross section is written as in Ref. 5.

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[10]C. H. Llewellyn Smith, Nucl. Phys. B17, 277 (1970).

[11]Recall that the $\pm$ components of the 4-vector V^m are given by $V^{\pm}=(V^0 \pm V^3)/\sqrt{2}$.

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Addendum to "Recalculation of the Crossed-Graph Contribution to the Fourth-Order Lamb Shift"

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The discrepancy among the various calculations of the crossed-graph contribution to the fourth-order Lamb shift is discussed and resolved.

Recently, the results of two additional calculations of the slope of the Dirac form factor of the free-electron vertex at zero momentum transfer have appeared.[1,2] These results agreed with each other, disagreed with the results of Ref. 3 and 4, and yielded the following:

$$F_1'(0)=\frac{\alpha^2}{m^2\pi^2}\left[-\tfrac{13}{36}\ln\lambda^{-2}+\tfrac{1}{72}\pi^2+\tfrac{7}{12}\pi^2\ln 2-\tfrac{7}{8}\zeta(3)-\tfrac{1181}{1728}\right]. \tag{A1}$$

The methods used to compute $F_1'(0)$ were vastly different: the one by Petermann using standard Feynman theory, the other by Remiddi *et al.* using dispersion techniques. Since both approaches gave the same answer and one differed from the result of Ref. 4, the present author decided to recheck his results completely.

Reanalysis showed that through an organizational error the coefficients of two terms, $I(3,4,3,2,5)$ and $I(2,2,3,2,5)$, were assigned the incorrect values, 6 and $-\frac{11}{2}$, respectively; the correct values are +1 and $+\frac{3}{4}$. In addition, Petermann[1] uncovered a genuine error in one of the integrals, namely, $I(3,1,1,3,4)$, for which Soto[3] listed the value

$$I(3,1,1,3,4)=\tfrac{1}{32}\pi^2-\tfrac{1}{12}. \tag{A2}$$

The correct value is

$$I(3,1,1,3,4)=\tfrac{1}{72}\pi^2+\tfrac{1}{6}. \tag{A3}$$

When the correct coefficients for $I(3,4,3,2,5)$ and $I(2,2,3,2,5)$ and the result of Eq. (A3) are employed in the present author's result [Eq. (3a), Ref. 4], it agrees with Eq. (A1).

It is both interesting and appropriate to note that Petermann lists a total of five integrals which he claims are incorrect. They are listed in Table I. Entry 3 of this table has already been discussed. The other terms reveal an important fact: Table II of Ref. 3 contains four misprints. For when the present author recomputed these integrals, he found them to be in agreement with the values he had used originally. Moreover, they were exactly the same as they appeared in preprint form.

These results led to an investigation of the table of coefficients for these integrals (Ref. 3, Table I). Petermann claimed to have found agreement with only about 75% of the published values for these coefficients. The present author, on the other hand, found generally excellent agreement between

TABLE I. Disputed integrals.[a]

Integral	Correct value	As listed in the preprint of Ref. 3	As published in Ref. 3
1. $I(2,1,1,1,3)$	$-\frac{1}{2}B+\zeta(3)$	$-\frac{1}{2}B+\zeta(3)$	$-\frac{1}{2}B$
2. $I(3,0,0,3,6)$	$\frac{1}{32}\pi^2-\frac{1}{8}$	$\frac{1}{32}\pi^2-\frac{1}{8}$	$\frac{1}{32}\pi^2+\frac{1}{32}B-\frac{1}{8}$
3. $I(3,1,1,3,4)$	$\frac{1}{72}\pi^2+\frac{1}{6}$	$\frac{1}{32}\pi^2-\frac{1}{12}$	$\frac{1}{32}\pi^2-\frac{1}{12}$
4. $I(3,3,3,5,8)$	$\frac{5753}{1920}\pi^2-6B-\frac{289}{16}$	$\frac{5753}{1920}\pi^2-6B-\frac{289}{16}$	$\frac{5723}{1920}\pi^2-6B-\frac{289}{16}$
5. $I(2,0,1,5,7)$	$\frac{247}{1152}\pi^2-\frac{97}{48}$	$\frac{247}{1152}\pi^2-\frac{97}{48}$	$\frac{247}{1152}\pi^2+\frac{97}{48}$

[a] $B=\pi^2\ln 2-\frac{5}{4}\zeta(3)$.

his results and Soto's preprint tables, with only a few terms missing. This led to the discovery that Soto's Table I in the *Physical Review A* was not transcribed correctly. In preprint form, this table consisted of six pages of two columns each, which were to be read down first and then across. However, when they were set up for publication, the pages were set directly beneath one another with the result that (because of unclear labeling) the coefficients of many terms were jumbled.

Apart from the sign discrepancy discussed in Ref. 4, it is this author's contention that Soto's original calculation[3] of the crossed graph contained only one error: an incorrect value for the integral $I(3,1,1,3,4)$. To be convinced of this fact, one need merely take Soto's original value for $F_1'(0)$, Eq. (3d) in Ref. 4, subtract from it the incorrect value of $I(3,1,1,3,4)$, Eq. (A2), and add the proper value, (A3), to obtain the correct result, (A1).

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[3]M. F. Soto, Phys. Rev. A 2, 734 (1970).
[4]J. A. Fox, Phys. Rev. D 3, 3228 (1971); 4, 3229(E) (1971).

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Virasoro Model and Finite-Energy Sum Rules

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Finite-energy integer-moment sums are calculated for the Virasoro model for $\eta^0\eta^0$ scattering and used to show that the leading contribution satisfies finite-energy sum rules for sufficiently large cutoff energy.

As an alternative to the Veneziano model, Virasoro[1] has proposed a new formula which reduces to the Veneziano amplitude when the quantity $D\equiv\alpha(s)+\alpha(t)+\alpha(u)$ assumes a particular integer value which depends on the reaction considered. This formula shares many features with that of Veneziano, but differs in other respects. In particular, its Regge trajectories are spaced two units of angular momentum apart. The complex-angular-momentum-plane structure of the Virasoro formula has been analyzed by Argyres and Lam.[2] Veneziano in his original paper[3] offered an inductive proof for the first-moment sum rule, while Vasavada[4] has given a proof for arbitrary-integer-moment sum rules for a generalized Veneziano amplitude. In this note we show explicitly that the Virasoro for-