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IDENTITIES AND INEQUALITIES FOR THE COSINE AND SINE FUNCTIONS

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Abstract. Identities and inequalities for the cosine and sine functions are obtained.

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REFERENCES

[1] P. J. DAVIS, *Interpolation and approximation*, Blaisdell Publishing Co. Ginn and Co. New York-Toronto-London, 1963.
[2] T. N. E. GREVILLE, *A generalization of Waring's formula*, Ann. Math. Statistics, 15:218–219, 1944.
[3] S. KARLIN AND J. M. KARON, *On Hermite-Birkhoff interpolation*, J. Approximation Theory, 6:90–115, 1972., Collection of articles dedicated to J. L. Walsh on his 75th birthday, V (Proc. Internat. Conf. Approximation Theory, Related Topics and their Applications, Univ. Maryland, College Park, Md., 1970).
[4] G. MASTROIANNI AND G. V. MILOVANOVIĆ, *Interpolation processes*, Springer Monographs in Mathematics. Springer-Verlag, Berlin, 2008., Basic theory and applications.
[5] G. V. MILOVANOVIĆ, *Corrigendum: "Least squares approximation with constraints"*, Math. Comp., 48(178):854, 1987.
[6] G. V. MILOVANOVIĆ AND S. WRIGGE, *Least squares approximation with constraints*, Math. Comp., 46(174):551–565, 1986.
[7] A. SPITZBART, *A generalization of Hermite's interpolation formula*, Amer. Math. Monthly, 67:42–46, 1960.
[8] E. T. WHITTAKER AND G. N. WATSON, *A course of modern analysis*, Cambridge Mathematical Library. Cambridge University Press, Cambridge, 1996., An introduction to the general theory of infinite processes and of analytic functions; with an account of the principal transcendental functions, Reprint of the fourth (1927) edition.