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Abstract:

In this thesis, we provide a basic introduction to the reader on the theory of classical modular forms. Firstly, we introduce the basic central objects - "modular forms" and "modular curves" by giving definitions of modular forms, cusp forms, and modular curves. We also give examples of modular forms and cusp forms, and state a few properties associated with them, both over SL2(Z) and its congruence subgroups. We then introduce the notion of "elliptic points" and "cusp points" and shift our focus to the fact that - "Modular curves are Riemann Surfaces". Then, we introduce some "dimension formulas" for the space of modular forms and cusp forms but restrict ourselves to SL2(Z). Then, we shift our discussion to "Eisenstein series", which are a very important example of modular forms, for both lower and higher levels. Lastly, we discuss the concepts of Hecke operators and L-functions and state their connection. Our primary interest is on L-

functions associated with modular forms

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