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	abstract	In this paper, we study the Seiberg-Witten equations on a compact 3-manifold with boundary. Solutions to these equations are called monopoles. Under some simple topological assumptions, we show that the solution space of all monopoles is a Banach manifold in suitable function space topologies. We then prove that the restriction of the space of monopoles to the boundary is a submersion onto a Lagrangian submanifold of the space of connections and spinors on the boundary. Both these spaces are infinite dimensional, even modulo gauge, since no boundary conditions are specified for the Seiberg-Witten equations on the 3-manifold. We study the analytic properties of these monopole spaces with an eye towards developing a monopole Floer theory for 3-manifolds with boundary, which we pursue in Part II.	**abstract**	In this paper, we study the Seiberg-Witten equations on a compact 3-manifold with boundary. Solutions to these equations are called monopoles. Under some simple topological assumptions, we show that the solution space of all monopoles is a Banach manifold in suitable function space topologies. We then prove that the restriction of the space of monopoles to the boundary is a submersion onto a Lagrangian submanifold of the space of connections and spinors on the boundary. Both these spaces are infinite dimensional, even modulo gauge, since no boundary conditions are specified for the Seiberg-Witten equations on the 3-manifold. We study the analytic properties of these monopole spaces with an eye towards developing a monopole Floer theory for three-manifolds with boundary, which we pursue in [10] .		
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