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Quantum Optics - Material harmonic oscillator 1
 Exercises On Quantum Optics Problem Lecture
 \Quantum Optics" | Exercise Sheet #12 Problem 1 (easy) Express the Lamb-Dicke parameter $\eta = k \cdot a$ in terms of the ratio of the recoil energy acquired by an ion at rest by absorbing a photon of frequency ω and the energy $\hbar\omega$ of a phonon. What regime does the
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 1. Consider a two-level atom which is initially prepared in state $|j\rangle$, and which interacts resonantly (i.e., the detuning is zero, $r = 0$) with a general single-mode light field $j = 1, n=0, c = n_j$, as described by the Jaynes-Cummings-model.
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 Classical & Quantum Optics - Universiteit Leiden
 Offered by University of Maryland, College Park. An introduction to quantum physics with emphasis on topics at the frontiers of research, and developing understanding through exercise.
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 Eigenvalues of the Hamiltonian in quantum optics
 Two possibilities $+1/2, -1/2$.
 2. State the number of possible electrons described by the following quantum numbers
 a. $n = 3, l = 0$
 b. $n = 3, l = 1$
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 d. $n = 5, l = 0, m_l = -2, m_s = -1/2$
 Not possible.
 3. Give the n and l values for the following orbitals
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 b. $3s, n=3, l=0$.
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