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1	Explain what Fermi questions are and then and compose one and its solution
2	The Fermi wavevector, momentum, and velocity
3	The Fermi energy and temperature
4	The Fermi sphere and the Fermi surface
5	The free electron gas and the Fermi electron gas
6	The Fermi nucleon gas inside the nucleus
7	The Fermi-Dirac distribution function
8	The Bose-Einstein distribution function
9	The Maxwell-Boltzman distribution function
10	What is Bloch's theorem and why is it so important and so useful?
11	Bloch waves, Bloch functions, and Bloch wavefunctions
12	The electron dispersion relation for completely free electrons
13	The electron dispersion relation for nearly free electrons
14	The electron dispersion relation for the electrons in real metals
15	The relationship between the electron dispersion relations and the band structure
16	What is crystal momentum, when is it conserved, and why is it so important?
17	What is a metal and why is it a good electrical and thermal conductor?
18	The extended, reduced, and repeated zone pictures for 1d nearly free electrons
19	The Hall effect
20	The density of free electron states in 1d, 2d, and 3d
21	The Fermi sphere when an electric field is applied
22	Why are there bands and why are there band gaps?
23	The relationship between the band structure and the effective mass
24	The Brillouin zones for the FCC and BCC structures
25	The Fermi surfaces of the alkalai metals and of the Nobel metals
26	Cyclotron resonance in metals
27	The belly and the neck orbits of the Nobel metals
28	Landau levels and the de Haas-van Alphen effect
29	Why are metals shiny and why are they sometimes colored?
30	The optical properties of the free electron gas
31	The plasma frequency in metals and plasmas
32	The optical properties of the alkalai metals and the Nobel metals
33	The complex dielectric constant
34	The complex refractive index
35	The complex wavevector and the complex momentum
36	Causality, analyticity, and the Kramers-Kronig dispersion relations