Formulas that might be memorized (but it is equally if not more important to understand the derivation well enough that you could derive these in a minute or two.)

$k_F = (3\pi^2 n)^{1/3}$ where n is the number density of "free" electrons in a metal

$D(\varepsilon_F) = 3n/2\varepsilon_F$ States per energy per volume (for both spins) at the Fermi level, in a free electron gas in 3d.

$D(\varepsilon) = D(\varepsilon_F)(\varepsilon/\varepsilon_F)^{d/2-1}$ Free electrons in any number of dimensions

$\omega_P = (4\pi ne^2/m)^{1/2}$ Free electrons

$\varepsilon = 1 + 4\pi i\sigma/\omega$ This follows from the Maxwell idea of $\partial P/\partial t$ as the current of the bound charges

$\varepsilon = 1 - \omega_p^2/\omega(\omega + i/\tau)$ Metals in free-electron approximation if ω_p is written as above. However, the formula is more generally applicable because ω_p can be generalized.

$\sigma = ne^2\tau/m$ for currents carried by electronic quasiparticles as in a metal or a nicely doped semiconductor. The units are tricky. If cgs units are used, the unit of σ is s^{-1}, consistent with the equation $\varepsilon = 1 + 4\pi i\sigma/\omega$. If you use SI (same as mksa) units, then σ has the correct dimensions of $C^2s/kgm^3 = C^2/Jsm = A/Vm = 1/\Omega m$. To convert σ in SI to σ in cgs, you multiply by $1/4\pi\varepsilon_0 = 9 \times 10^9\ Jm/C^2$. Perhaps I will give you σ and ask you to find τ.