The collision between shear-Alfvén wave packets propagating in opposite directions parallel to a uniform magnetic field provides a mechanism for generating anisotropic small scales. A model of weak magnetohydrodynamic turbulence is developed based on exact analytic expressions of the three-wave interactions, derived from the reduced magnetohydrodynamic equations by perturbation theory. The time-evolution of the anisotropic turbulence spectrum in the direction perpendicular to the magnetic field is simulated numerically using the three-wave formulae. The relationship between the two spectral indexes of the two oppositely propagating waves is found to be consistent with recent results based on wave kinetic equations. In particular, a forward wave packet that interacts with a sequence of random backward wave packets, each with energy spectrum set to a $k_{\perp}^{-2}$ dependence, is shown to evolve numerically to a $k_{\perp}^{-2}$ energy spectrum.

*Part F of program listing*