

ES734/834 EXAM II, 2002

Do #1,#2,#3 Plus Two Others. Five Total.

1. Show that reflections from a horizontal interface plot as a straight line on an x^2 versus t^2 plot. Assume horizontal ground surface. Explain your derivation step-by-step.
2. Compare and contrast the “common-mid-point” and “common-offset” methods of collecting seismic reflection data. What are the advantages and disadvantages of each method?
3. What are Rayleigh reflection and transmission coefficients (include formulae)? Why are they important to understand? Explain in detail.
4. Explain the procedure for making the “dynamic correction” to CMP data. Do not repeat material from question #2.
5. Explain how we can determine average velocity versus vertical travel time using CMP data. This question is about procedure, not about different definitions of average velocity.
6. Explain “diffraction migration” of CMP data. Include purpose and procedure.
7. Divide this single-channel reflection record into seismic stratigraphic units. Explain how you picked the units and describe each one.

