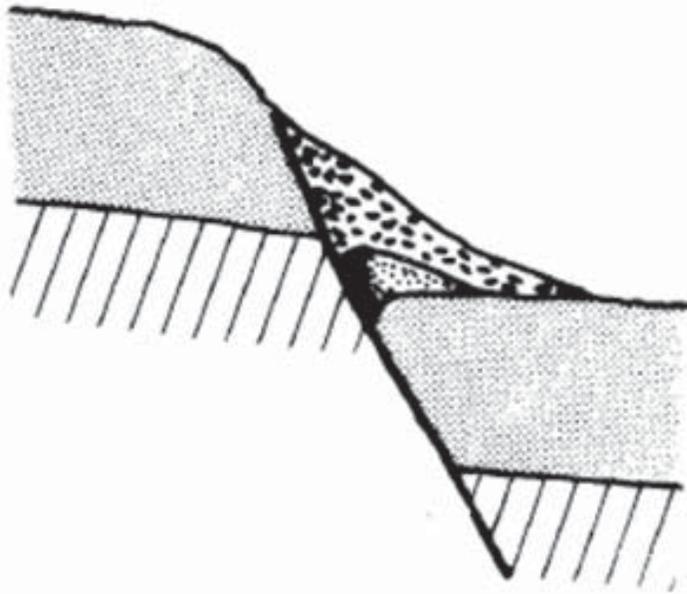


Geo 106, Earthquake Country Paleoseismology Activity

Name: _____

Date: _____

1. How many earthquakes are represented by this fault trench log? _____



2. How far into the past can radiocarbon be used to estimate the age of earthquakes? (Circle the best answer)

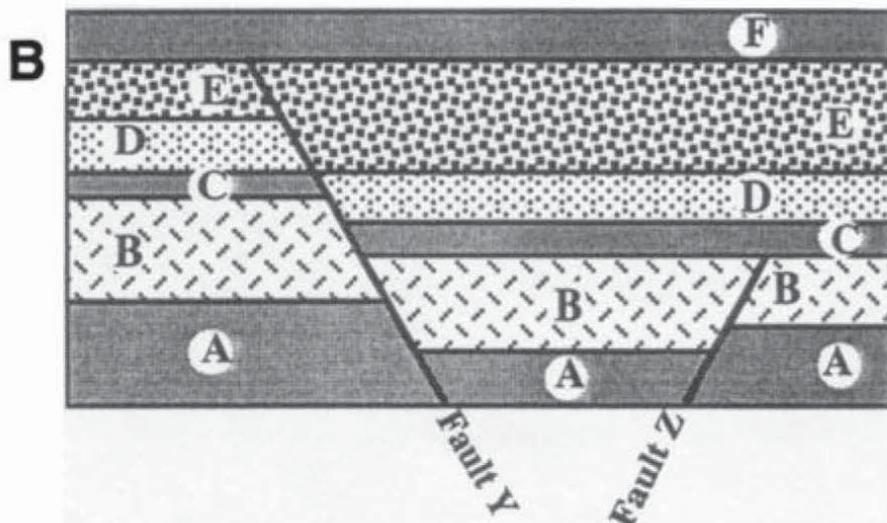
- a. 4,000,000 years
- b. 40,000 years
- c. 400 years
- d. 400,000 years

3. In diagram B:

Which is older, layer C or layer F? _____

Which is older, fault Y or fault Z? _____

How many earthquakes are represented? _____



Schematic diagrams showing how the provenance of scarp-derived colluvium may vary through successive fault displacements. Vertical ticks indicate soils.

(A) First faulting event creates a free face entirely in the unit marked by short dashes.

(B) Deposition of the first colluvial wedge, composed exclusively of material derived from the short-dashed unit.

(C) Second faulting event creates a basal tension fissure into which the earlier colluvial wedge is dropped. The lower part of the free face at the main scarp is composed mainly of the unit marked by triangles.

(D) The second colluvial wedge fills the tension fissure and then progrades out onto the downthrown block. The lower part of the second colluvial wedge is derived mainly from gravity and debris deposition from the lower part of the free face and is thus composed of material from the triangle unit. As the scarp continues to backwaste and decline, more colluvial material is derived from the upper part of the scarp (upper short-dashed unit).

(E) Third faulting event creates a free face in the dotted unit and a new antithetic fault farther to the right of the earlier antithetic fault, which was not rejuvenated in this event. Most of the free face exposes units marked by dots and triangles.

(F) The third colluvial wedge buries the earlier two wedges. The sequence of lithologies in the third wedge roughly parallels the stratigraphic sequence exposed in the scarp face; that is, the basal portion is derived from the dotted unit, and the upper (wash facies) portion is mainly derived from the short-dashed unit.