

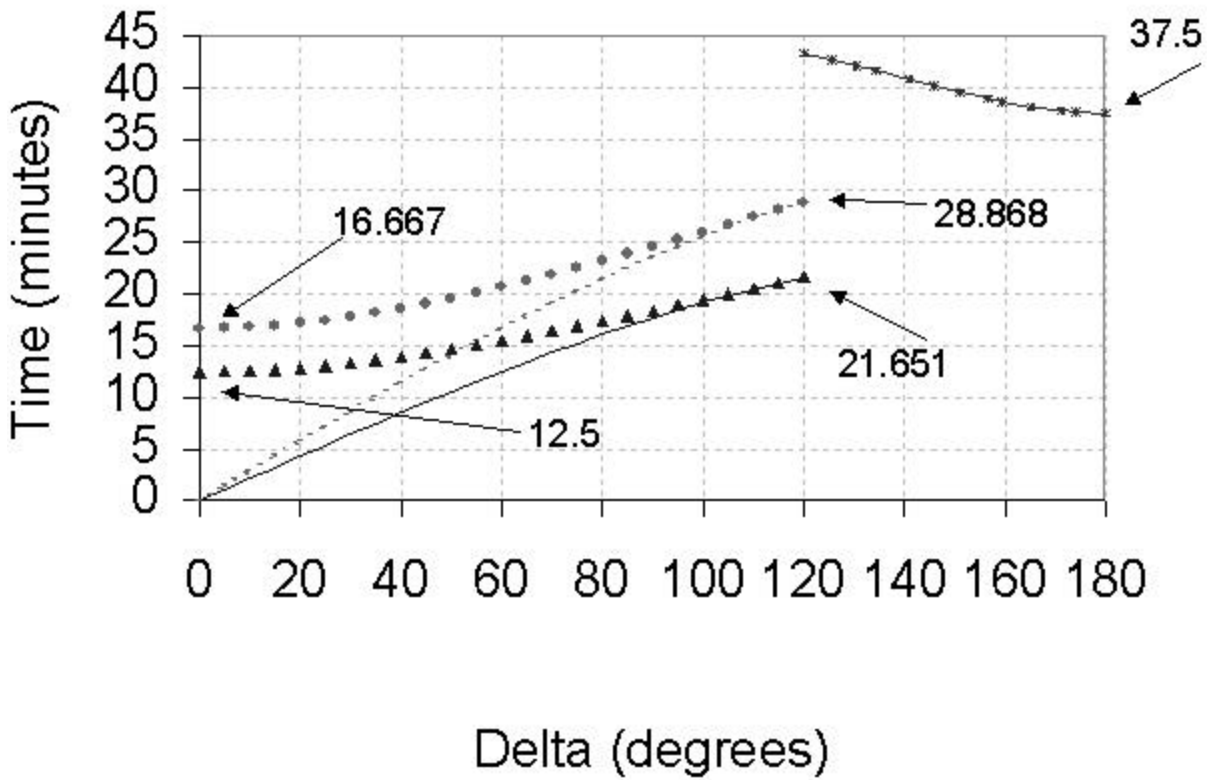
1. For each of the following pairs of phrases, provide a brief, accurate definition of the phrase, and explain the principle, process, or experimental procedure which links the two phrases (how are they linked relative to class?).

a. Blocking Temp (or Curie T) and coercive force (from hysteresis diagram)

b. Paleomagnetic Euler pole versus transform fault

c. Shadow zone versus blind zone

2. For this planet, assume mantle P-waves travel at 8 km/sec and the core radius is 3000 kilometers.



a. Label the phases (PcP, ScS, P, S, PkP) on this T-delta chart

b. How would the T-delta diagram change if the planet did not have a core?

c. **Accurately** sketch the arrival time curve of a P -wave that traveled directly along the surface (not refracted through the mantle).

d. Mantle thickness is: _____

e. V_p in the core is: _____

f. V_s in the mantle is: _____

g. The critical angle is: _____

3. A fellow geologist proposes that a large stack of Late Cretaceous volcanic rocks in Montana's fold and thrust belt have been rotated around a vertical axis during emplacement of the thrust sheets. You recognize that paleomagnetism is the best (probably only) way to test the hypothesis:

a. What laboratory treatment might be required for your paleomagnetic samples and why?

b. Of what importance is paleosecular variation for this experiment and how does it affect your sampling?

c. Some of the volcanic flows are folded. How does this help your investigation?

d. When you eventually obtain good paleomagnetic directions from the flows, what do you do with them to test the hypothesis that the rocks are rotated?

Fill in the blanks with an appropriate (usually geophysical) phrase, equation, or word:

Dear Uncle Ed,

Sometimes I thought this class would never end. I mean, _____, _____
_____ and _____; how much can you stand? The worst stuff in 437 was _____ and
_____. I really don't remember anything about _____. But _____ and
_____ were actually sort of interesting and I can see where one might actually apply
_____ and/or _____ to some problems such as _____
_____ which are worth solving. Of course, I really studied _____ and
_____ 'cause I knew they were going to be on the exam. And I am sure glad _____ wasn't on
the test. Before I took this course I never knew that _____ could be used to
_____.

We actually only covered two topics, _____ and _____. Basically seismic
_____ works by a wave _____ at an interface according to _____ law. When the
wave gets back to the surface it is recorded by a _____ and we plot them in _____
_____ space. From there it is simple, and we figure out _____, _____, and
_____ without an outcrop in sight. The second topic, _____ is a little different, and the
_____ responds to lateral changes in subsurface _____ which is largely controlled by
the percent of _____ in the underlying rocks. Curiously, or so the pundits claim, magnetic
_____ changes with latitude so that a buried magnetic source has
a _____ at different latitudes. So anyhow, I need some bucks to go lounge on
the beaches of Brazil for my own edification and educational fulfillment – I mean, it is vacation time.