In this assignment, we will use the principles of relative dating and absolute dating to partially reconstruct the geologic history of an area from a geologic cross section. Examine the cross section and determine the sequence of events before answering the following questions. Note, however, that it may be impossible to determine the relative age of two rock units (that is, which one is older) if they are nowhere in contact with one another. Circle your answers:

1. What is the oldest rock unit? 1 2 3 4 5 6 7 8
2. What is the youngest rock unit? 1 2 3 4 5 6 7 8
3a. Is unit 3 younger than unit 8? Yes No Can’t tell
3b. Explain your logic ________________________________________________________
__________________________________________________________________________
4a. Is unit 1 younger than unit 7? Yes No Can’t tell
4b. Why? __________________________________________________________________
___________________________________________________________________________

To help further constrain the geologic history, you happened to collect samples of units 1, 7, and 8 and sent them off to a laboratory for an absolute age determination using the number of parent atoms of one element and the number of its daughter atoms. Here are the results.

<table>
<thead>
<tr>
<th>Rock Unit</th>
<th>Number of Parent Atoms</th>
<th>Number of Daughter Atoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>250</td>
<td>750</td>
</tr>
<tr>
<td>7</td>
<td>250</td>
<td>750</td>
</tr>
<tr>
<td>8</td>
<td>500</td>
<td>500</td>
</tr>
</tbody>
</table>

5. Using this new data, rock unit 1 is:
   a. older than unit 7  c. the same age as unit 7
   b. younger than unit 7  d. there is not enough information to tell

(dike; units 1, 2, and 6 are baked along contact with the dike)

Notes:
1. Unit 2 contains clasts of unit 3, 4, 5, and 6
2. Unit 5 contains clasts of Unit 6
3. Units 4, 5, and 6 are baked along contact with unit 7