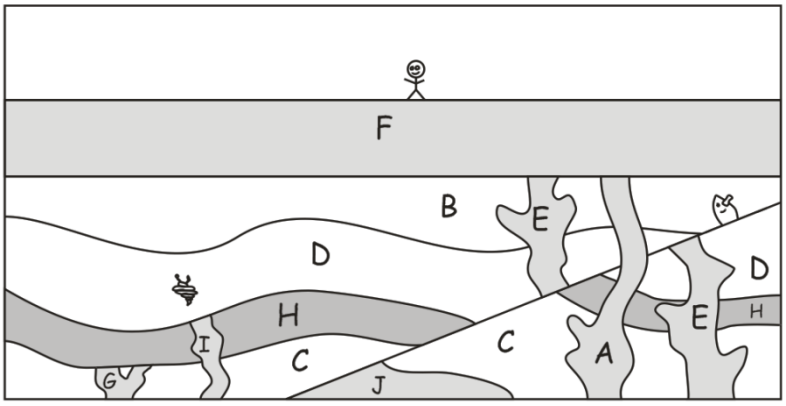
ESS 100 (Stapleton) Name: _____
Quiz Version 4: Rock Dating

Organize the lettered rock samples from oldest to youngest. Then make a mark where the earthquake occurred in the sequence. The half-life of the radioactive atoms in these samples is 5 million years.

Oldest									Newest

1. Sample E contains 50 parent atoms and 102 Ar-40 daughter atoms.
   a. What percentage of those atoms are parent atoms?
   13% 23% 33% 43% 53%

   b. Which of the following is closest to the age of Sample E?
   4my 8my 12my 16my 20my



2. Sample G contains 23 parent atoms and 188 daughter atoms.
   a. What percentage of those atoms are parent atoms? 11% 21% 31% 41% 51%

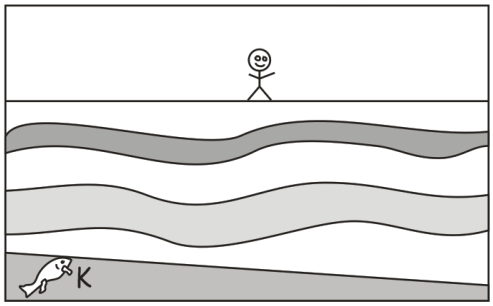
   b. Which of the following is closest to the age of Sample G?
   4my 8my 12my 16my 20my

3. Sample I contains 20 parent atoms and 86 daughter atoms.

   a. What percentage of those atoms are parent atoms?
   19% 39% 59% 79% 99%
   b. Which of the following is closest to the age of Sample I?
   4my 8my 12my 16my 20my

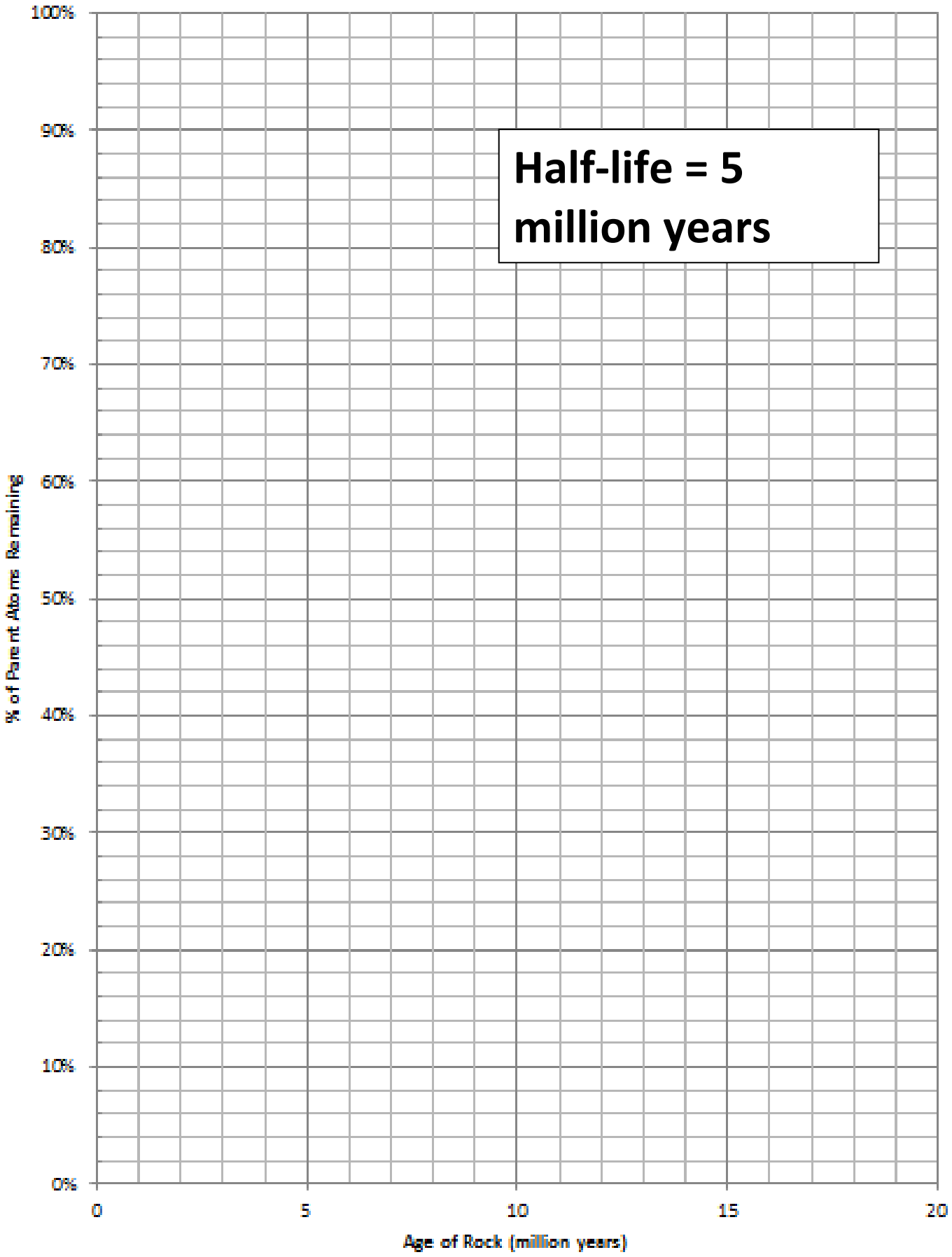
4. Sample A contains 10 parent atoms and 7 daughter atoms.
   a. What percentage of those atoms are parent atoms?
   19% 29% 39% 49% 59%

   b. Which of the following is closest to the age of Sample A?
   4my 8my 12my 16my 20my



5. How many years ago did the Earthquake create the fault in the top diagram?
   0-4my 4-8my 8-12my 12-16my 16-20my

6. The diagram on the right shows rock samples from another location on Earth. Choose the most likely age range for layer K, in that diagram.
   0-4my 4-8my 8-12my 12-16my 16-20my


Half-life = 5 million years
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
% of Parent Atoms Remaining
0
5
10
15
20
Age of Rock (million years)