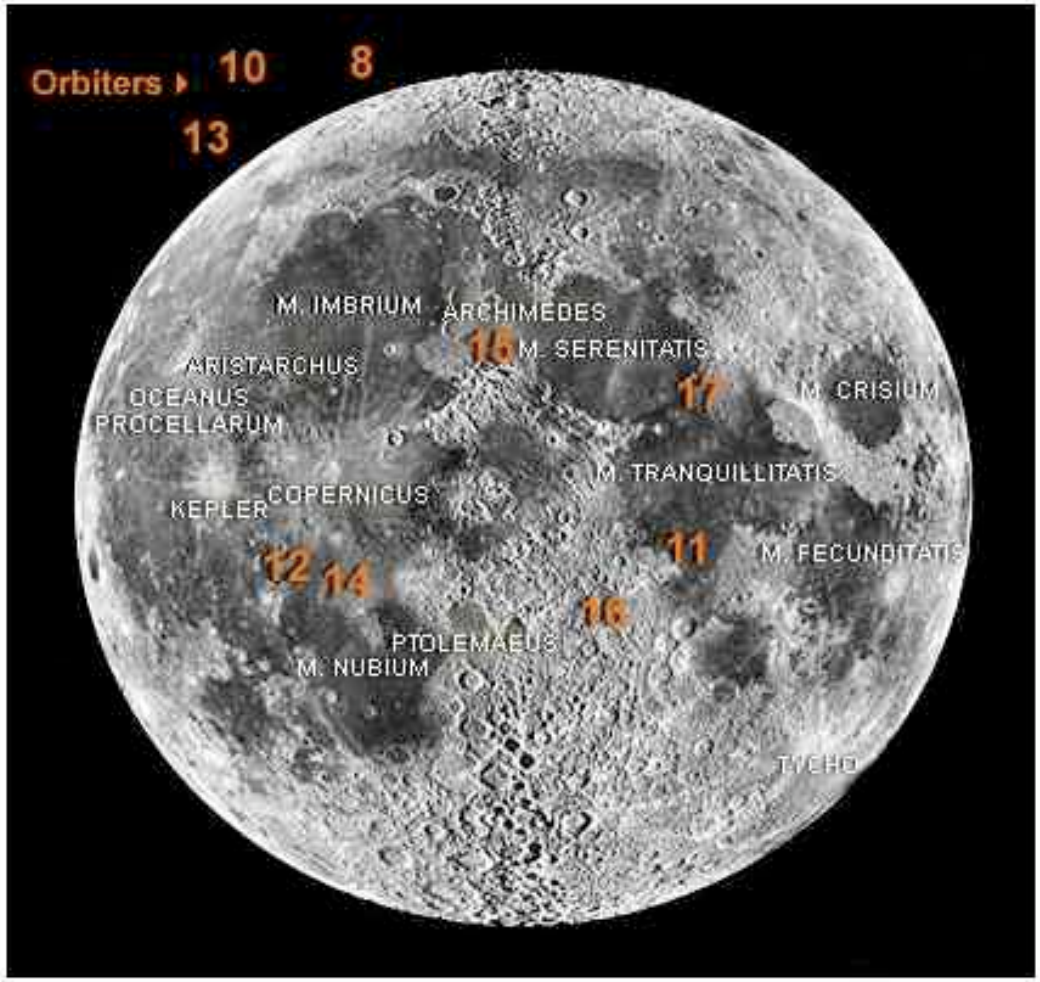
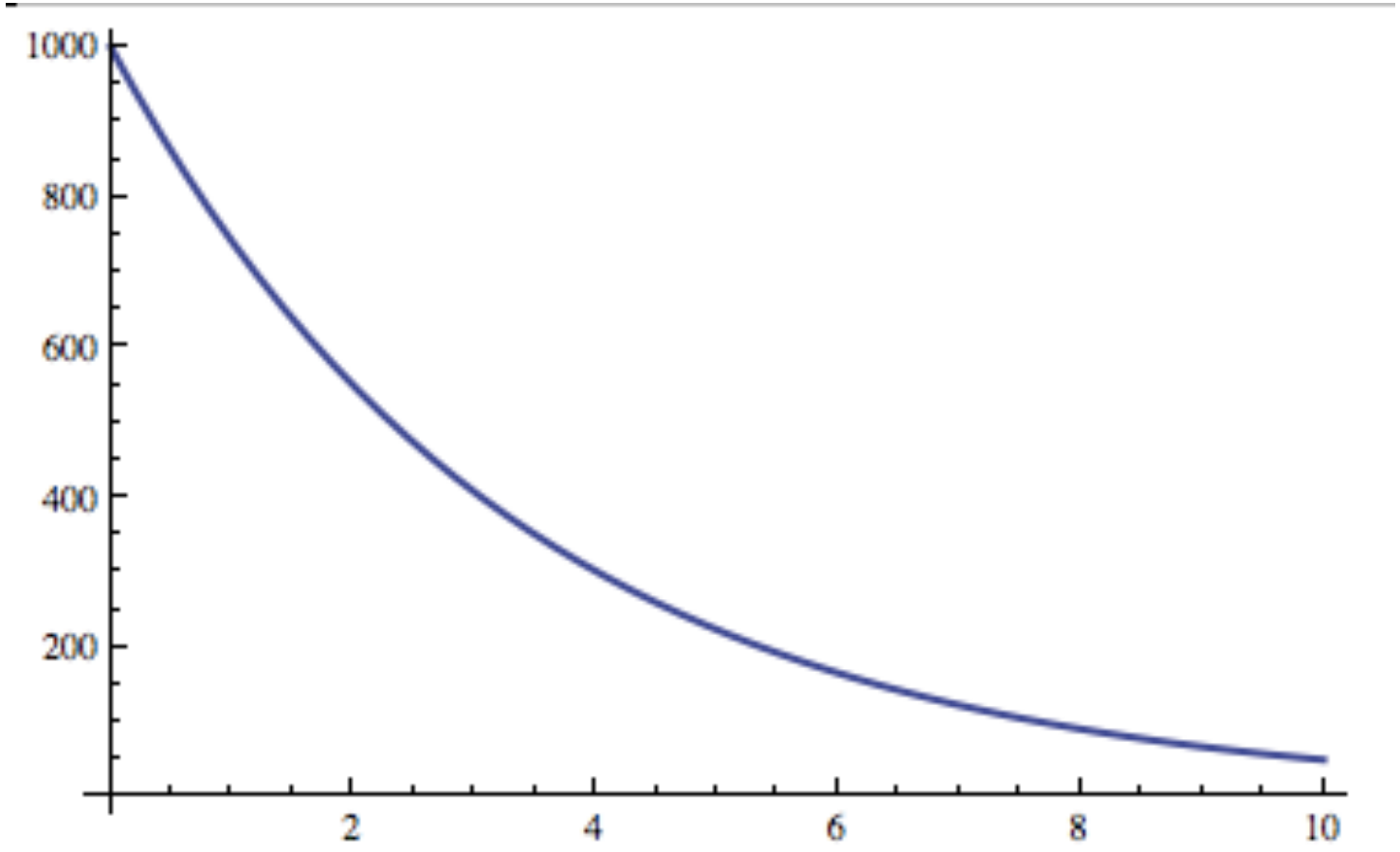
Apollo landing sites

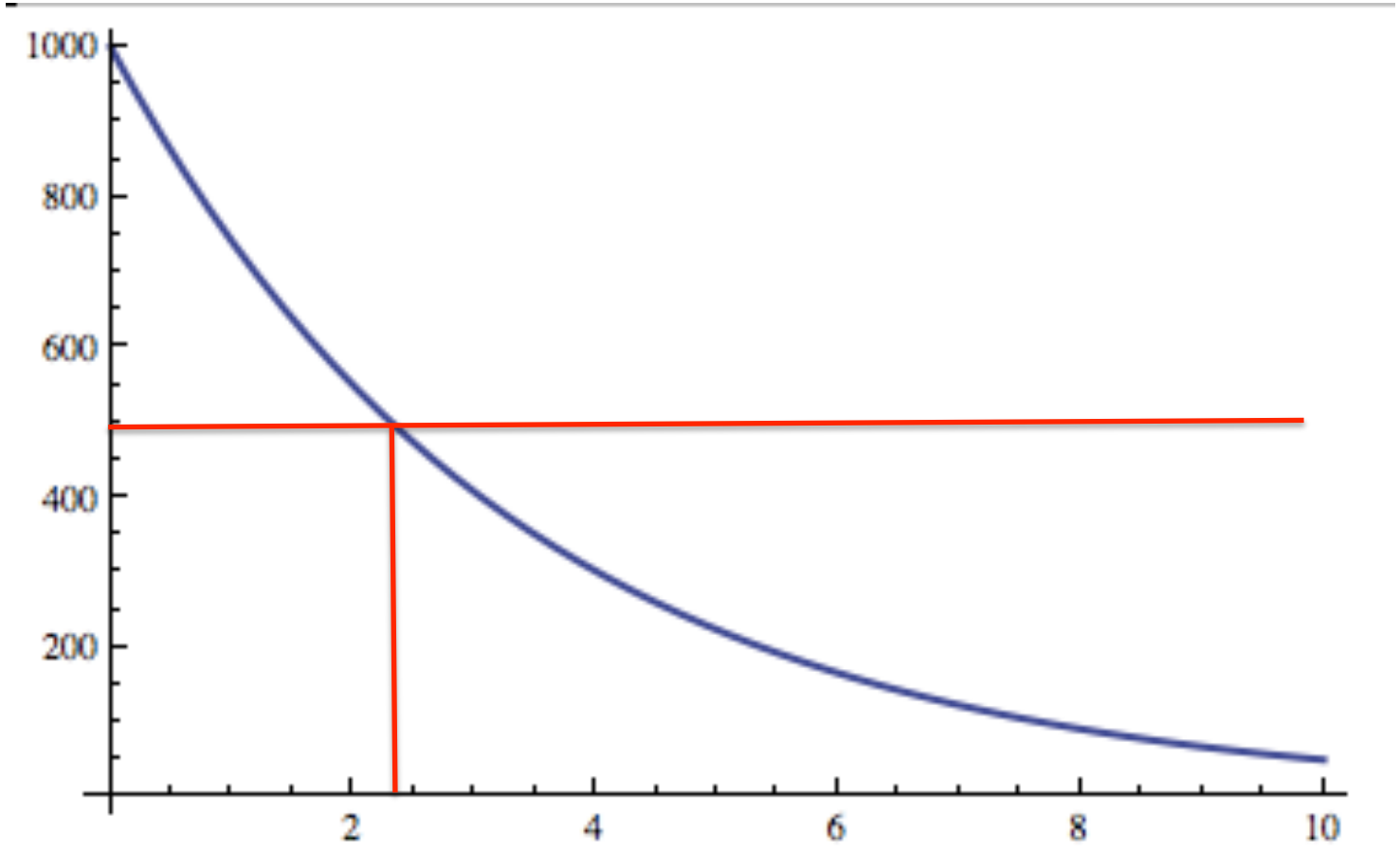


Lunar sample from Apollo 17: troctolite from the terrae

Decay of radioisotope

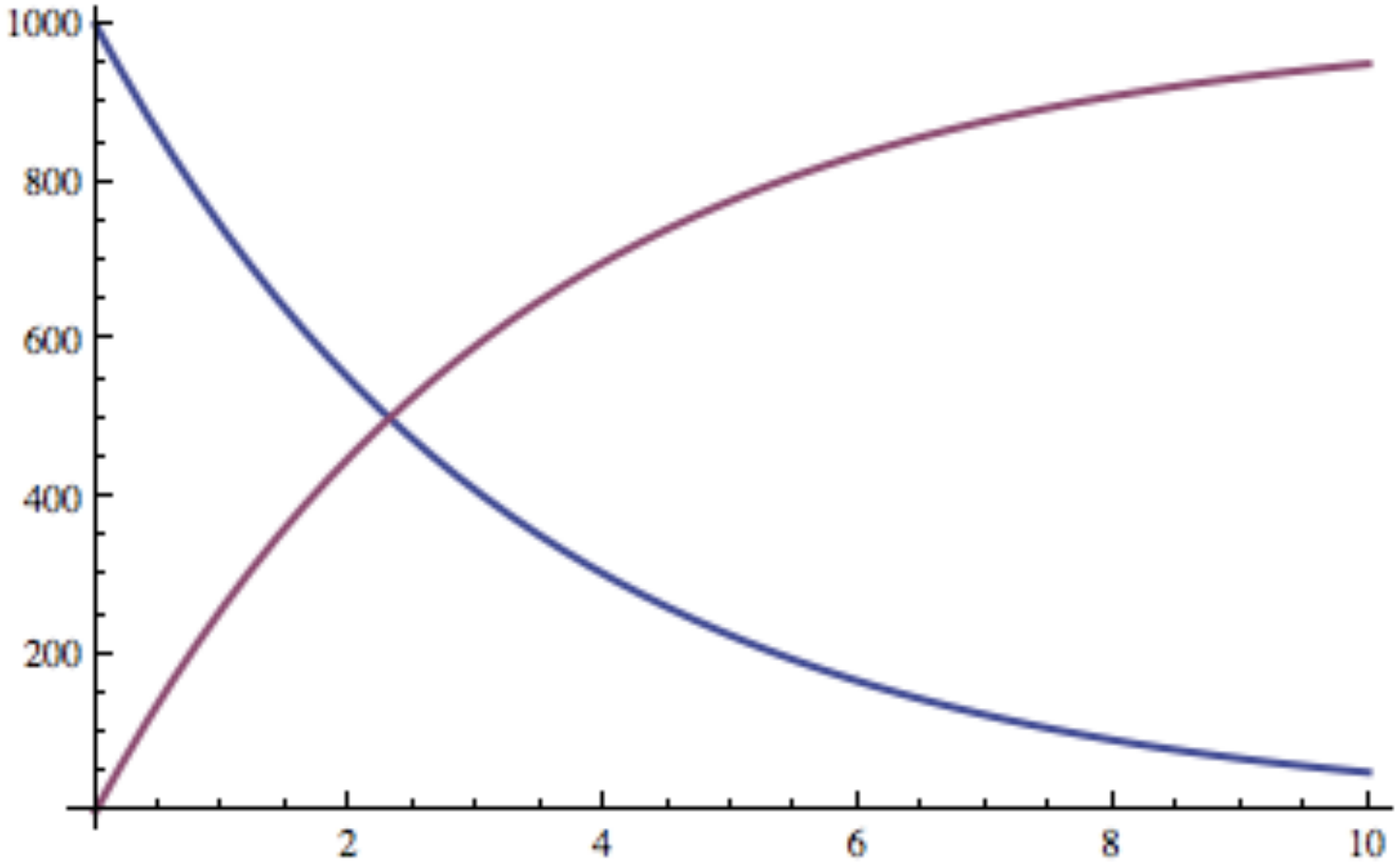


Decay of radioisotope

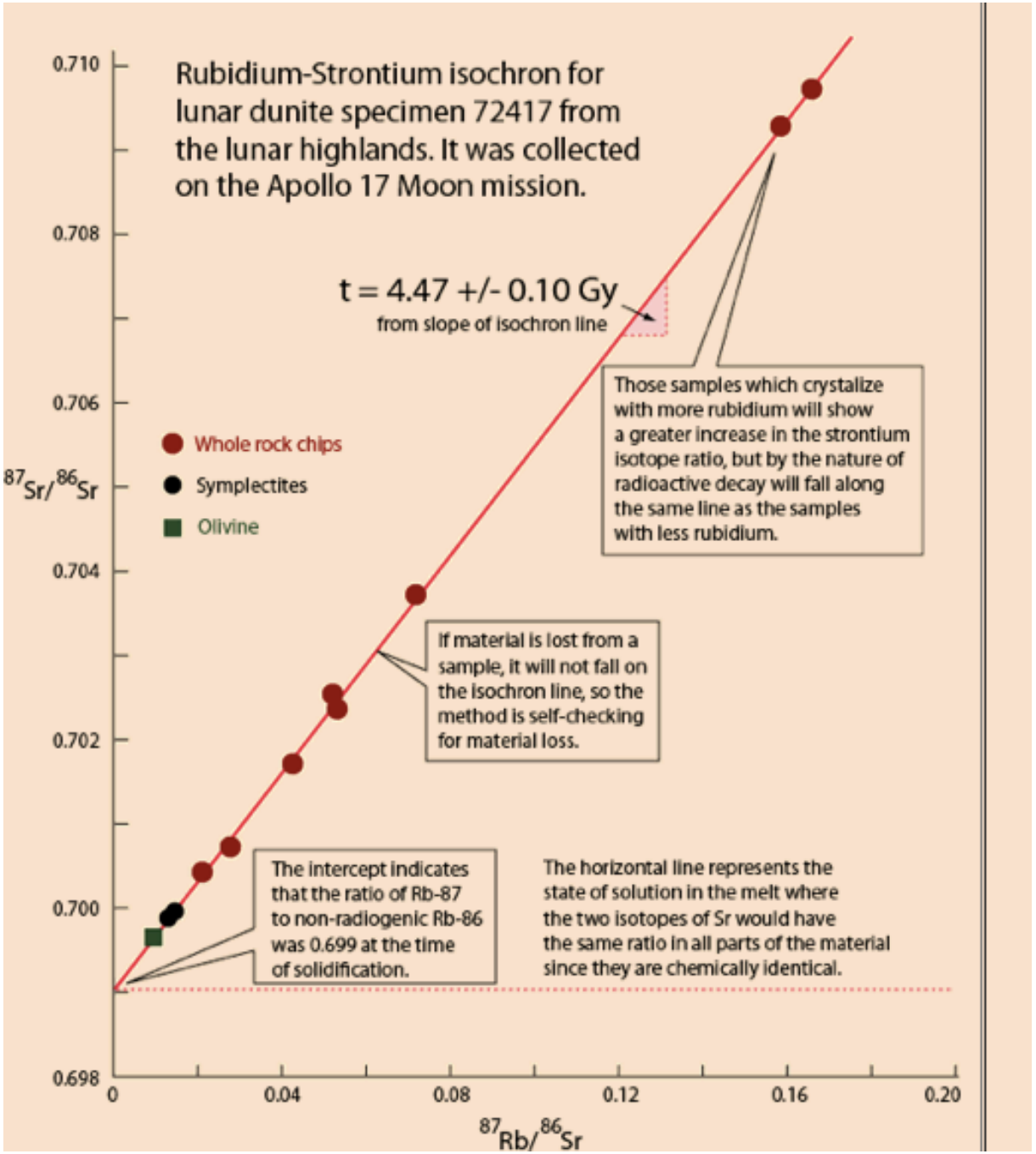


Concept of “half life”

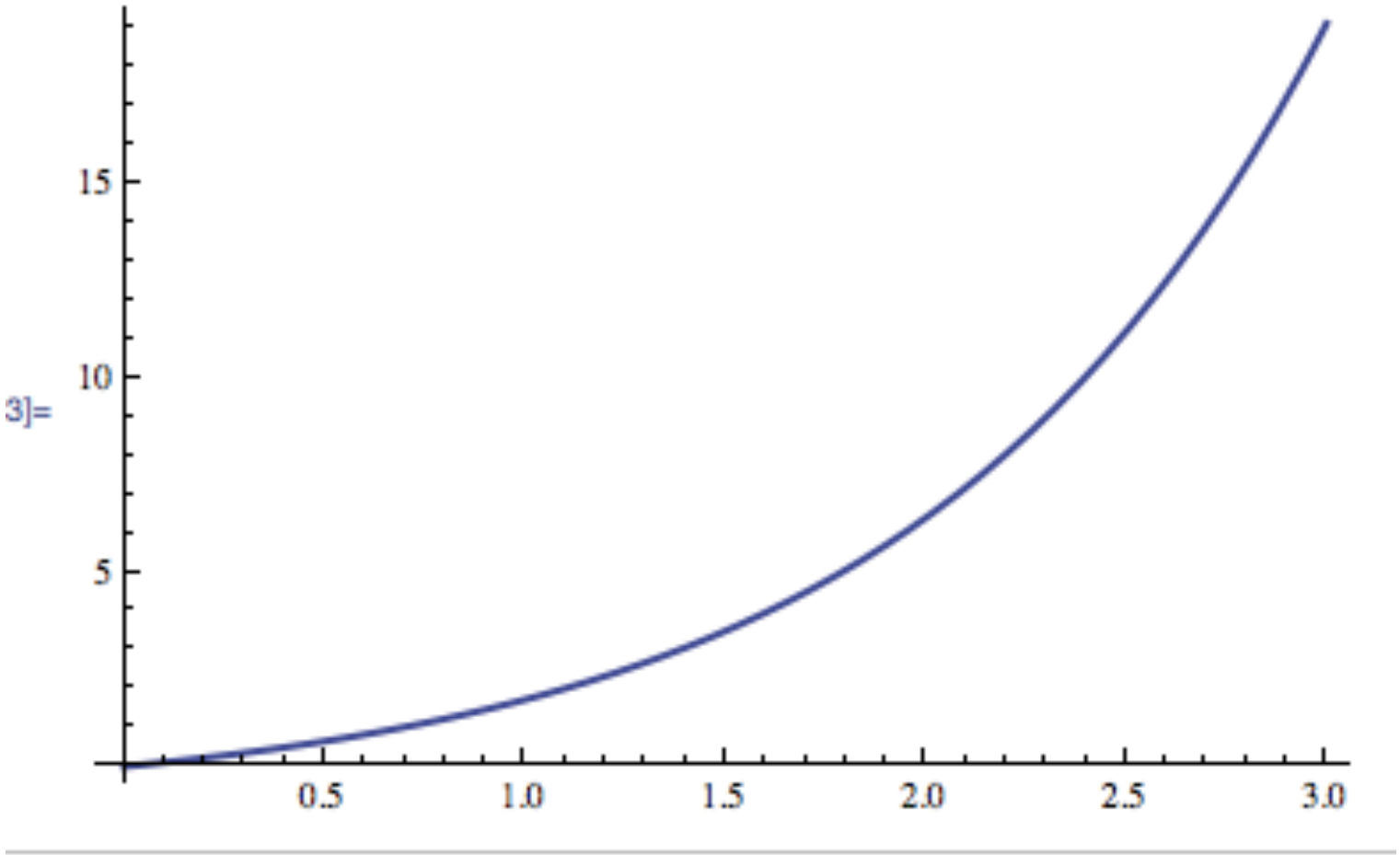
Parent and Daughter isotope, radioactive decay



Rubidium-Strontium dating for a lunar highland rock

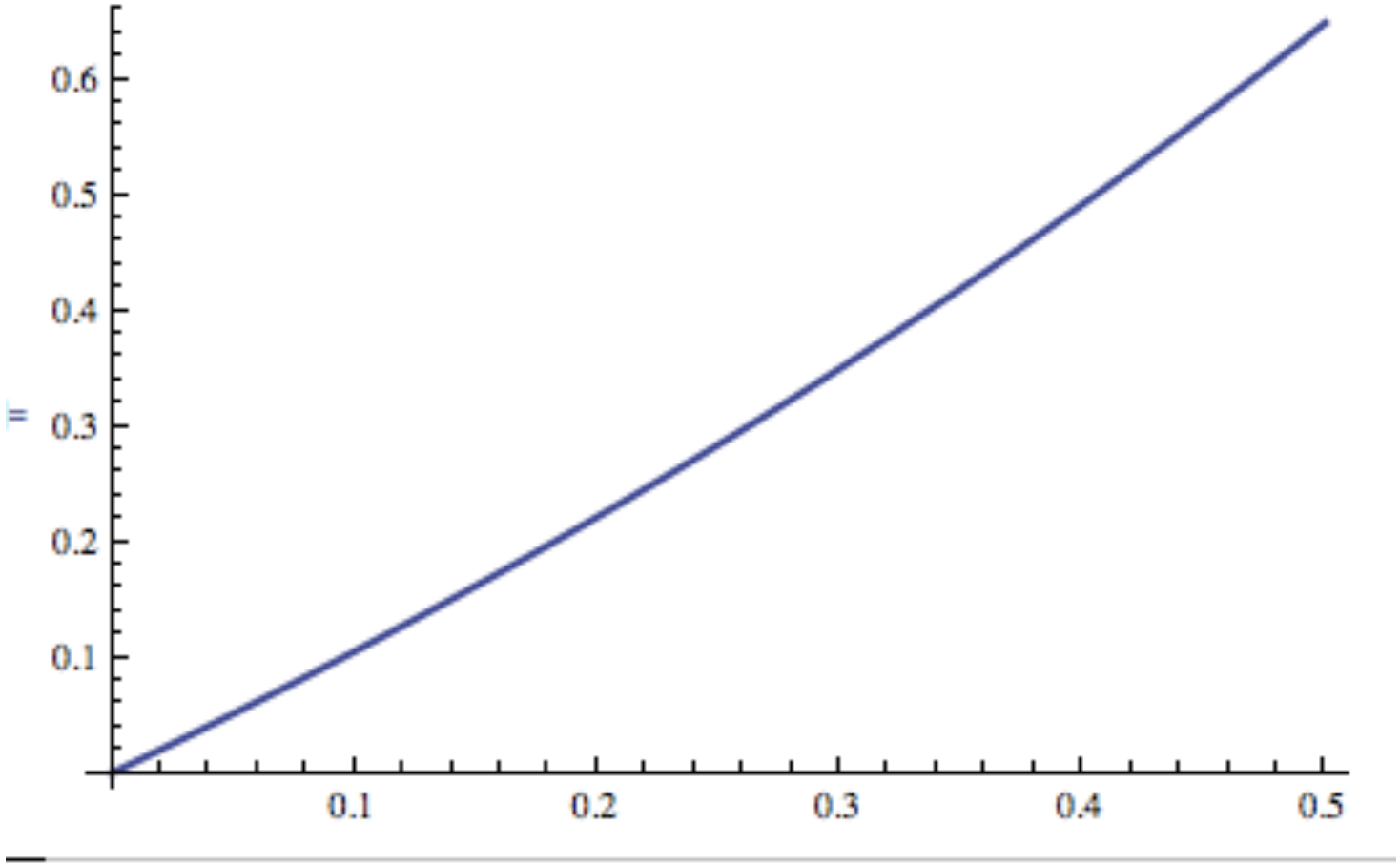


Slope in radioisotope dating



Slope rapidly increases as x increases

Slope a in radioisotope dating (continued)



Ages of Formation of Lunar Rocks

The age of formation of lunar rocks can be determined by radioisotope dating. See p144 of the textbook for a description of this technique. A radioisotope that proves useful in dating rock samples is Rubidium 87, which decays to Strontium 87.

The following conclusions result from the dating of Moon rocks.

1. Moon rocks are extremely old relative to Earth rocks. All of the samples returned had formation ages from 3.2 to 4.5 billion years. Check previous notes for the comparison of this to Earth rocks.
2. The rocks found on the Maria ranged from 3.2 to 3.8 billion years.
3. The rocks found in the terrae, or thought to come from terrae regions, ranged from 3.8 to 4.5 billion years.

Moon Rocks and the Age of the Solar System

No lunar rocks have been found which are older than 4.5 billion years. Furthermore, no rock has been found anywhere in the solar system that is older than 4.5 billion years old. This is because the whole solar system is only slightly older than 4.5 Gyr (Gyr= billion years).