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PASSAGE VII

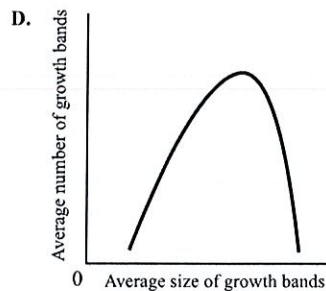
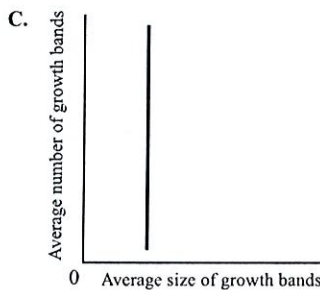
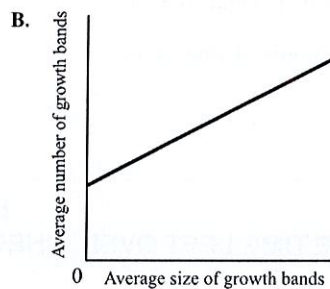
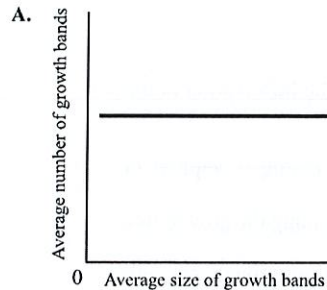
The growth rate of trees can be determined by counting concentric growth bands present in the trunks. This is called *dendrochronology*. Because *dendrochronology* is not completely accurate on its own, it is often combined with a process called *cross dating*, whereby band-growth characteristics across many samples from a homogeneous area (area of similar environmental conditions) are matched. It is believed that variation in the bands is due to some variation in environmental conditions, such as annual rainfall, when the bands were formed. During years with less rain, fewer bands will be formed, and the bands will be narrower than the bands formed during years with heavier rainfall. Heavier rainfall typically results in faster growth.

Researchers applied this information to white oak trees at three separate sites and tabulated the following data. At least 50 trees of varying ages were sampled from each site.

Site	Average number of growth bands per year	Average size of growth bands (mm)
1	11	2
2	15	4
3	20	12

35. Based on the observed trend in the data, which of the following statements is true?
- A. Site 1 received a higher average annual rainfall than Site 2.
 - B. Site 2 received a higher average annual rainfall than Site 3.
 - C. Site 3 received a higher average annual rainfall than Site 2.
 - D. Site 1 received a higher average annual rainfall than Site 3.
36. On the basis of the tabulated data, one would conclude that the trees at Site 1, as compared to the trees at Site 2:
- F. experienced faster growth.
 - G. experienced slower growth.
 - H. experienced the same growth rate.
 - J. are not homogenous.

37. Which of the following graphs best represents the data presented in the table?



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38. Based on the passage, the average annual rainfall was most likely highest at which site?
- F. Site 1
 - G. Site 2
 - H. Site 3
 - J. It cannot be determined from the information in the passage.
39. According to the passage, cross dating is applied in order to:
- A. improve the accuracy of determining the growth rate of trees.
 - B. predict the amount of rainfall any given area will receive.
 - C. decrease the number of trees that are required to be studied.
 - D. reduce the number of bands formed during years with heavy rainfall.
40. Trees from another site, Site 4, were sampled and found to have an average of 13 growth bands per year. According to the tabulated data, the average size of these growth bands, in millimeters, is most likely:
- F. less than 2.
 - G. between 2 and 4.
 - H. between 4 and 12.
 - J. greater than 12.

END OF THE SCIENCE REASONING TEST.
STOP! IF YOU HAVE TIME LEFT OVER, CHECK YOUR WORK ON THIS SECTION ONLY.