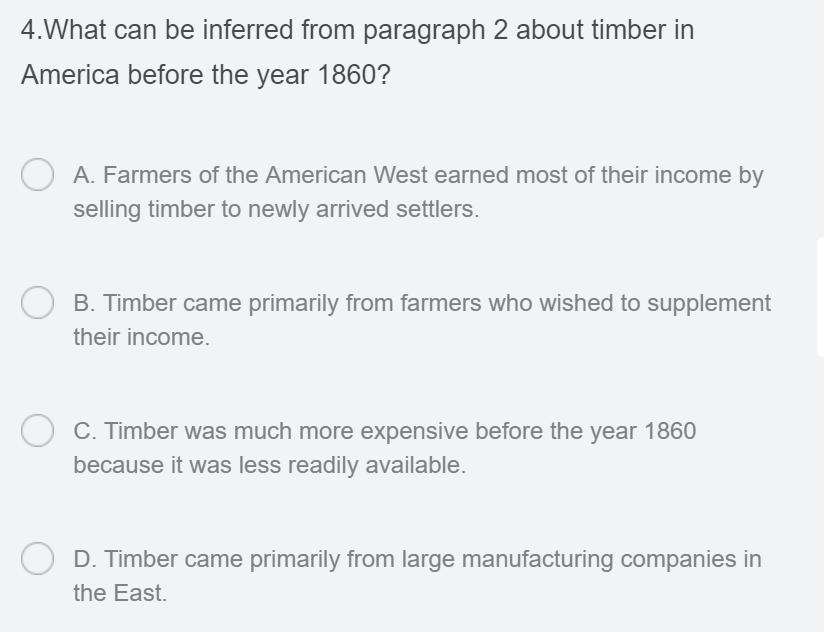
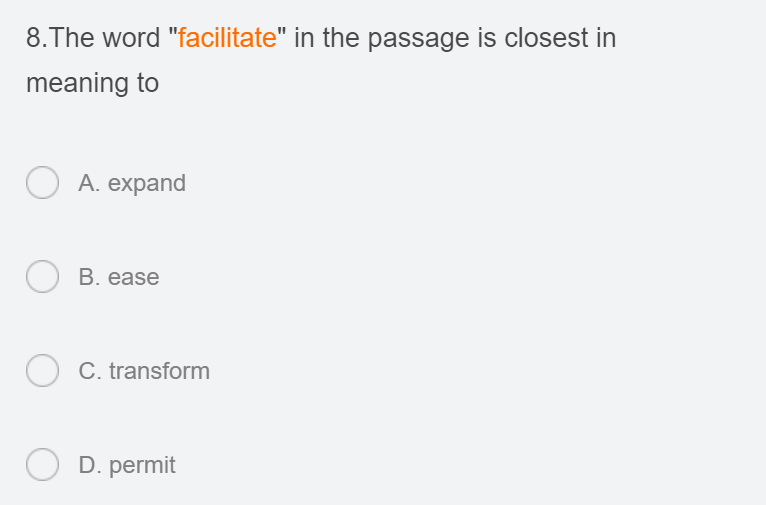
In nineteenth-century America, practically everything that was built involved wood.Pine was especially attractive for building purposes.It is durable and strong, yet soft enough to be easily worked with even the simplest of hand tools.It also floats nicely on water, which allowed it to be transported to distant markets across the nation.The central and northern reaches of the Great Lakes states—Michigan, Wisconsin, and Minnesota—all contained extensive pine forests as well as many large rivers for floating logs into the Great Lakes, from where they were transported nationwide.

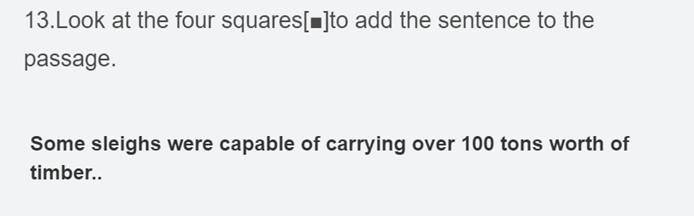
By 1860, the settlement of the American West along with timber shortages in the East converged with ever-widening impact on the pine forests of the Great Lakes states. Over the next 30 years, lumbering became a full-fledged enterprise in Michigan, Wisconsin, and Minnesota. Newly formed lumbering corporations bought up huge tracts of pineland and set about systematically cutting the trees. Both the colonists and the later industrialists saw timber as a commodity, but the latter group adopted a far more thorough and calculating approach to removing trees. In this sense, what happened between 1860 and 1890 represented a significant break with the past. No longer were farmers in search of extra income the main source for shingles, firewood, and other wood products. By the 1870s, farmers and city dwellers alike purchased forest products from large manufacturing companies located in the Great Lakes states rather than chopping wood themselves or buying it locally.



The commercialization of lumbering was in part the product of technological change. The early, thick saw blades tended to waste a large quantity of wood, with perhaps as much as a third of the log left behind on the floor as sawdust or scrap. In the 1870s, however, the British-invented band saw, with its thinner blade, became standard issue in the Great Lakes states' lumber factories.Meanwhile, the rise of steam-powered mills streamlined production by allowing for the more efficient, centralized, and continuous cutting of lumber. Steam helped to automate a variety of tasks, from cutting to the carrying away of waste. Mills also employed steam to heat log ponds, preventing them from freezing and making possible year-round lumber production.

For industrial lumbering to succeed, a way had to be found to neutralize the effects of the seasons on production. Traditionally, cutting took place in the winter, when snow and ice made it easier to drag logs on sleds or sleighs to the banks of streams. Once the streams and lakes thawed, workers rafted the logs to mills, where they were cut into lumber in the summer.[A] If nature did not cooperate—if the winter proved dry and warm, if the spring thaw was delayed—production would suffer. To counter the effects of climate on lumber production, loggers experimented with a variety of techniques for transporting trees out of the woods. [B]In the 1870s, loggers in the Great Lakes states began sprinkling water on sleigh roads, giving them an artificial ice coating to facilitate travel. [C]The ice reduced the friction and allowed workers to move larger and heavier loads.[D]





But all the sprinkling in the world would not save a logger from the threat of a warm winter. Without snow the sleigh roads turned to mud. In the 1870s, a set of snowless winters left lumber companies to ponder ways of liberating themselves from the seasons. Railroads were one possibility.At first, the remoteness of the pine forests discouraged common carriers from laying track.But increasing lumber prices in the late 1870s combined with periodic warm, dry winters compelled loggers to turn to iron rails. By 1887, 89 logging railroads crisscrossed Michigan, transforming logging from a winter activity into a year-round one.

Once the logs arrived at a river, the trip downstream to a mill could be a long and tortuous one.Logjams (buildups of logs that prevent logs from moving downstream) were common—at times stretching for 10 miles—and became even more frequent as pressure on the northern Midwest pinelands increased in the 1860s. To help keep the logs moving efficiently, barriers called booms (essentially a chain of floating logs) were constructed to control the direction of the timber. By the 1870s, lumber companies existed in all the major logging areas of the northern Midwest.

14.Directions: An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some sentences do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. This question is worth 2 points. Drag your answer choices to the spaces where they belong. To remove an answer choice, click on it. To review the passage, click VIEW TEXT.

Increasing demands for timber in nineteenth-century America transformed lumbering in the Great Lakes region.

