The Birchbark House Math Activity

Based on the novel *The Birchbark House* by Louise Erdrich

1. The story is divided into seasons. Write as a ratio the number of months in one season compared to the number of months in one full year.

2. The setting of the story is a village on the banks of Lake Superior. The governments of the states and province that border the lake have decided to evenly divide the shoreline. How much shoreline will each control? Lake Superior's shoreline length (including islands) is 2,730 miles / 4,393 km.*
*(https://www.glerl.noaa.gov/education/ourlakes/lakes.html)

Note: you will need to look up an important fact to solve this problem.

3. The family decides to have a feast to celebrate the bountiful rice gathering. Old Tallow offers to hunt for enough rabbits for the meal. Yellow Kettle must decide how many rabbits are needed. She thinks 1/2 a rabbit per person is plenty. Old Tallow and Fishtail will be invited. How many rabbits should Old Tallow bring?

4. In autumn, Omakayas decides to make makazins for each person in her family. How many makazins will she make? (Include Omakayas)

The best hide to make makazins comes from the moose. What information do you need to calculate the number of hides Omakayas will need for her project?

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5. Yellow Kettle hopes to dry lots of wild berries for Biboon. First, she needs to gather enough berries. Nokomis says to plan for 1 handful of berries per person for every 2 days. How many handfuls of berries must be gathered?

6. Omakayas picks all the heartberries she can find. She is happy because she has filled a birch bark basket each day for 2 weeks. Each basket holds 5 handfuls of berries. How many handfuls of heartberries has she harvested?

7. As wild berries dry, they shrink. Angeline finds that three baskets of fresh berries fit in one basket after they are dried. The family has gathered the following amounts of fresh berries: 10 baskets of blueberries,
12 baskets of heartberries, 9 baskets of raspberries and 7 baskets of chokecherries. How many birchbark baskets does the family need to store their dried berries?

8. Deydey gathers firewood and piles it outside the winter house. He gathers 1/3 of a cord per day. (A cord is 128 cubic feet of wood stacked tightly. This is typically stacked 4' high by 4' wide by 8' long) He works for 9 days. He estimates they will burn about 1 cord of firewood each month. Has he gathered enough wood for the winter months? Explain.

Challenges

Viewing the photos of this wigwam may help you solve this problem.
http://www.trackertrail.com/survival/shelter/wigwam/wigwampukaskwa.html

Nokomis needs to collect enough birchbark to make a covering for the summer house. The house will be 7 feet tall, and about 6 feet wide and 15 feet long. Paper Birch trees once grew 80 ft tall. Their trunks grew 3 feet in diameter. Nokomis will collect one 6 foot high birch sheet from each tree. How many trees will she need to have enough sheets to cover the walls of the wigwam?

In 1913, botanists Nathaniel Lord Britton and Addison Brown of the New York Botanical Garden published *An Illustrated Flora of the Northern United States and Canada*. They reported many huge trees. The trees are gone now.
http://www.maquah.net/AhnishinahbaeotjibwayReflections/1995/1995-08_remnants.html

Red Cedar (Juniperius virginiana), height about 100 feet, trunk diameter 5 feet.
Paper Birch (Betula papyrifera), height about 80 feet, trunk diameter 3 feet.
White Oak (Quercus alba), height about 150 feet, trunk diameter 8 feet.
Choke-cherry (Prunus virginiana), height about 90 feet, trunk diameter about 4 ft.
Sugar Maple (Acer saccarum), height 120 feet, trunk diameter 3 1/2 feet.

Wisconsin keeps a record of Champion trees.
https://dnr.wi.gov/topic/urbanforests/champion/

Select one tree listed above. (Use the search feature) Compare the 1913 figures with the current ones. Which is larger - the 1913 one or today's Champion?

"Each animal has just enough brains to tan its own hide." Nokomis