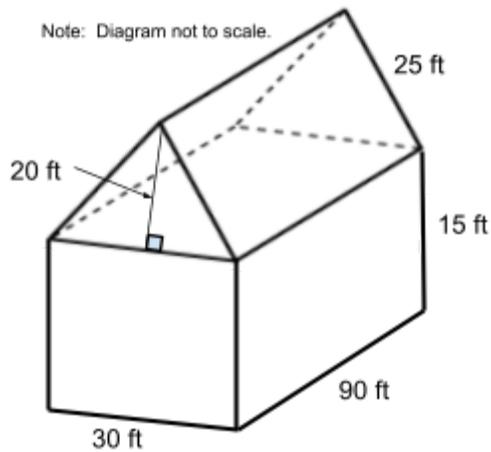


# Grand Ronde Plankhouse

Name: \_\_\_\_\_



Area of a rectangle:  $l \times w$

Area of a triangle:  $\frac{1}{2} b \times h$

Volume of a rectangular prism:  $l \times w \times h$

Volume of a triangular prism:  $l(\frac{1}{2} b \times h)$

Surface area: For any prism, the surface area is the sum of the area of each of its faces.

The Confederated Tribes of Grand Ronde built a traditional plankhouse in 2010. The basic design of a plankhouse has the following features:

- A rectangular meeting room with a dirt floor.
- A roof that is shaped like a triangular prism.
- The meeting room is open all the way to the peak of the roof.

When the tribe built the plankhouse they wanted to make sure it had room for a large amount of people for ceremonies and events. In order to accomplish that goal, the tribe had to do some calculations to make sure the building would be big enough. The plankhouse is 90 feet long, 30 feet wide and the walls are 15 feet tall. The peak is 35 feet above ground.

1. To determine the amount of space inside the plankhouse, find the volume of the plankhouse, including all the space under the roof. Show your work below.
  
  
  
  
  
  
  
  
  
  
2. To determine the amount of wood that was needed to build the plankhouse, find the surface area of the plankhouse, including the roof. Include the dirt floor as part of the surface area. Show your work below.