Estimating Roof Framing Materials

Directions:

The questions for this activity are based upon a building which is 12' wide by 36' long with a 5/12 slope gable roof and with no overhang. Common rafters will be installed on 24" centers. To simplify calculations, percentage of waste will not be added to final answers.

Materials List:

- Common Rafters and Gable Rafters: 2" x 6" board
- Ridge Board: 2" x 8" board
- Purlin: 2" x 4" and 2" x 6" boards
- Sheathing (Decking) Material: 4' x 8' 7/16" OSB sheets
- Band or Fascia: 2" x 6" board

Use the information provided in the presentation to answer the following questions.

- 1. Using a construction calculator or rafter length guidebook, calculate the theoretical length of the common rafters for the building.
- 2. Estimate the number of common rafters needed to frame the roof.
- 3. Estimate the length of the ridge board.
- 4. Estimate the number of gable, or barge, rafters needed to frame the roof.

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5. Estimate the linear footage of material needed to create the gable, or barge, rafters to frame each end of the roof.

6. Estimate the linear footage of material needed to create the purlins to support the roof.

7. Estimate the amount of linear footage of material needed to install the band or fascia board.

- 8. Using the formula for area, determine the amount of square footage for each side of the roof being constructed.
- 9. Using the area determined in Question 8, how many sheets of sheathing (decking) material will be needed to deck the roof?

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10. Create a spreadsheet using the previous calculations to indicate the amount of lumber and sheet materials required to complete the roof framing process.