



Connecting Industry to Mathematics Instruction

NSF ATE Award # 1954291

Roof Pitch Student Activity Sheet



In partnership with

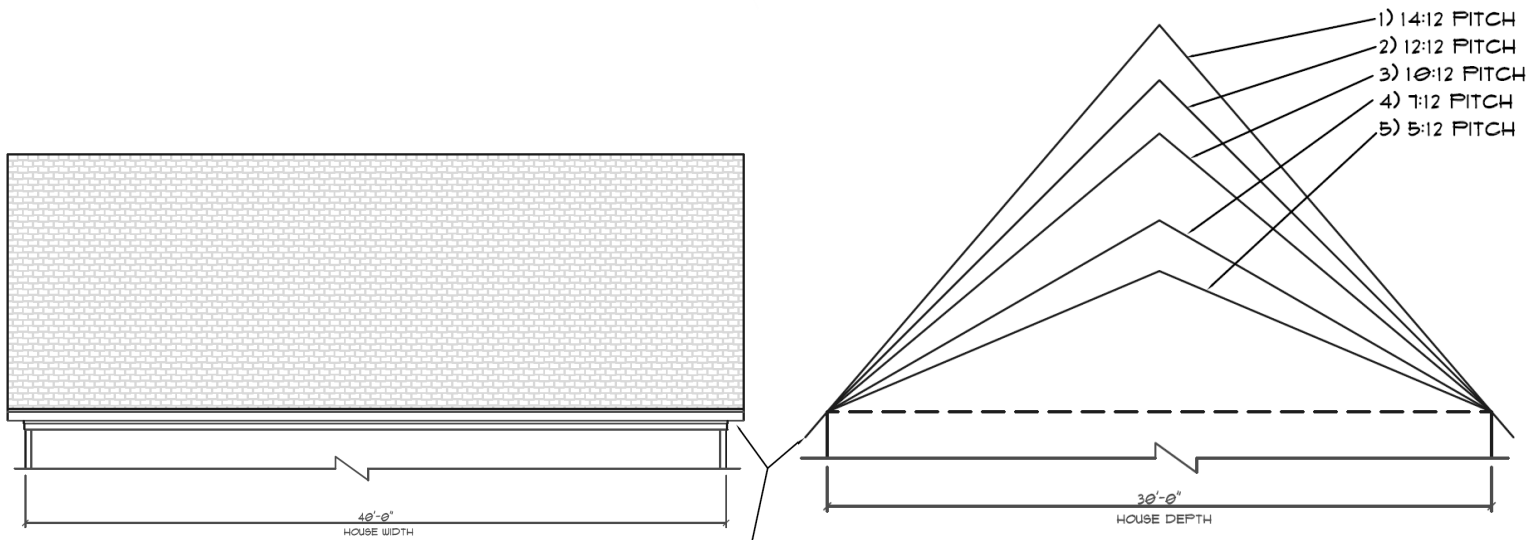


WAKE COUNTY
PUBLIC SCHOOL SYSTEM

A builder has been hired to create plans for a new barndominium home. The builder will need to consider several different options for the roof's pitch. Not only should the builder consider cost, but the client also wants the option of adding a second floor heated living space in the future.



Task 1: Given several different pitch options, how many 4'x 8' sheets of plywood are needed to cover the roof.



*note: this roof has a 12 inch overhang (horizontal distance from siding to roof edge) on the front, back, and sides.

Task 2: The client has decided they would like the pitch to be steep enough to allow for an additional second floor heated living space. NC Residential Building Code section R305.1 - Minimum Height states, "Not more than 50 percent of the required floor area of a room or space is permitted to have a sloped ceiling less than 7 feet in height with no portion of the required floor area less than 5 feet in height." Considering all 5 different pitches in task one, calculate the possible square footage of the entire heated living space including the first and second floors.

