

Name _____



Topic 2 **enVision™** STEM Project

Linear Equations

BLM 1

Compare Roof Pitches

Roof pitch is often written as a ratio of rise to run. Roofs with a pitch of 1:12, for example, rise 1 foot for each 12 feet of run.

Sketch six roofs with different pitches (from 1:12 to 12:12), then use a protractor to determine the angle of each roof.

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Linear Equations

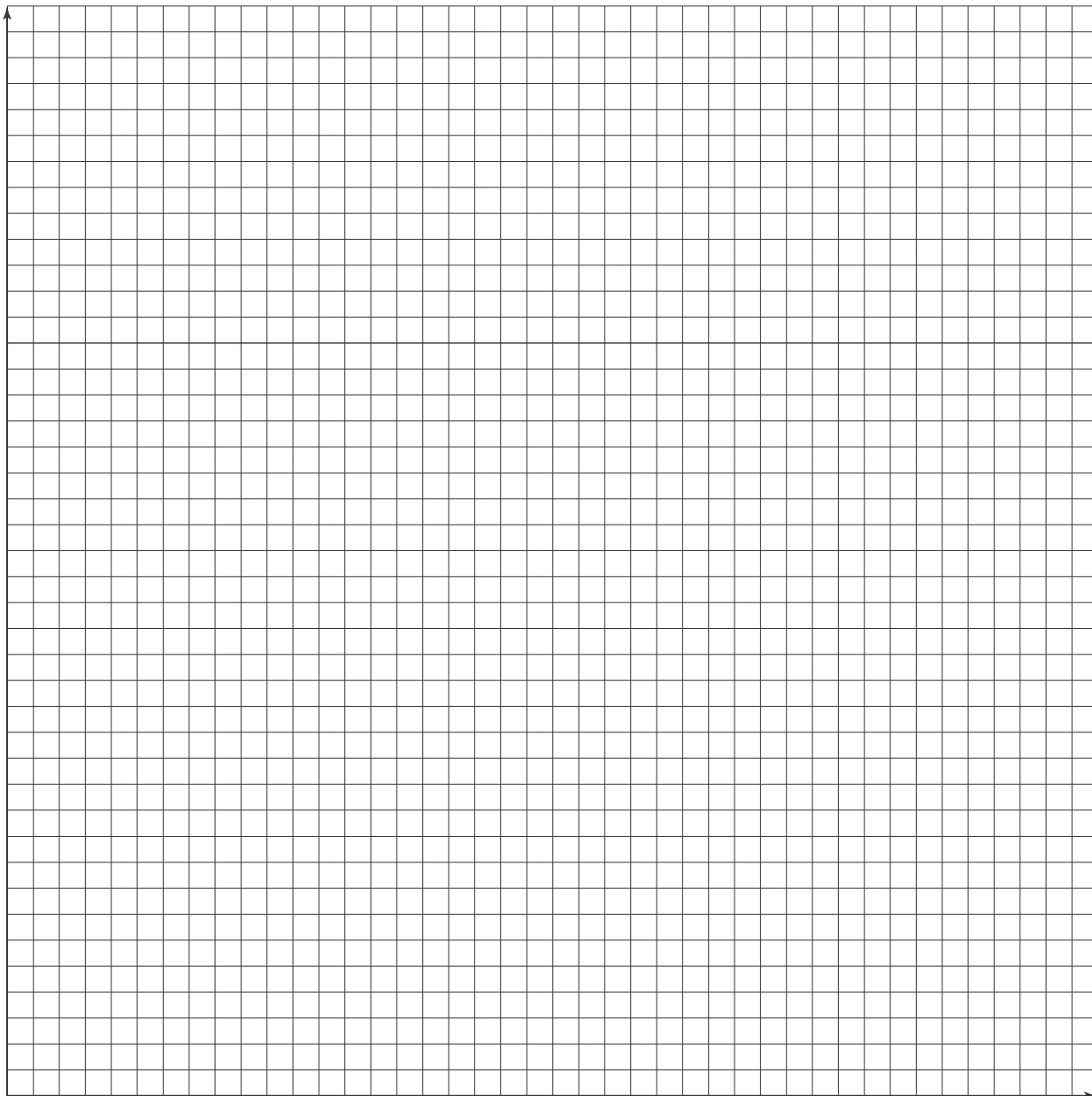
BLM 2

Model the Pitch of a Roof

Use lines to model the roof on a local building. If you live in a house with a pitched roof, you can use that roof.

Step 1: Draw the roof on the coordinate plane below. Use the origin for the lower-left corner of the roof.

Step 2: Draw lines for each part of the roof. Write the equations of the lines. Determine the point of intersection of the lines, which should be the peak of the roof.



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Linear Equations

BLM 3

Pitched Roofs and Solar Panels

Research the roof pitches that work well with solar panels. Then design a roof to include solar panels. Calculate the pitch and the roof angle.

Draw your roof both from the side and from the front. Indicate where the solar panels will be placed and which direction (north, south, east, or west) the panels will face.