Building Inspector Simulation

EQ: Is the framing for the foundation square?

Mathematical Application: The Converse of the Pythagorean Theorem

Materials: clipboards, measuring tapes, masking tape, pencil

Procedure:

1. Mark a 3 foot length on one side of a corner.
2. Mark a 4 foot length on the adjacent side of the same corner.
3. Measure the distance between the two marks.
4. Draw a diagram of your measurements on your "Inspection Notes" page.
5. Use the table on your "Inspection Notes" page to make a conclusion about the construction of the corner.
6. Repeat steps 1-6 for all four corners of the foundation framing.
7. Now that you have inspected the work, you need to present your findings to the construction foreman, Mr. Jeff Johnson. Summarize your results in an "Inspection Report" to Mr. Johnson. Make sure to be specific about your findings. Follow the scoring rubric for guidance.

Scoring Rubric for the "Inspection Report":

1 point	Address the letter to Mr. Jeff Johnson, Construction Foreman
1 point	Introduce yourselves as inspectors and give your names
5 points	Describe what you were inspecting, what you were inspecting it for, and where it is located
10 points	Describe your method of inspection
20 points	Detail the results of your findings
5 points	Give a final summary of your findings
2 points	State whether the framing passes or fails the inspection
1 point	Sign the letter

Inspection Notes

Use this page to record your diagrams and thoughts before writing the official "Inspection Report". The table at the bottom of the page will help in your decision process.

Corner 1	Corner 2
Corner 3	Corner 4

If $c^2 < a^2 + b^2$, then the corner is acute.
If $c^2 > a^2 + b^2$, then the corner is obtuse.
If $c^2 = a^2 + b^2$, then the corner is right. (0.5 margin of error allowed)
If the corner is right, the corner passes inspection.
If the corner is not right, the corner fails inspection.
If all four corners are right, the foundation passes inspection.