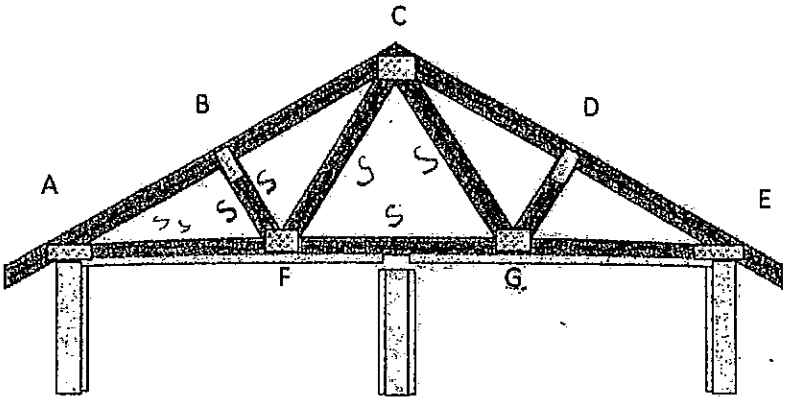
Formal Geometry Performance Task #2 Name[illegible] 4 ate 11/01/12

Grading Teache er 5

onceptual_____ Procedural ____ Communication _ ALL _____

This is a roof truss



Joe is building the roof of a house using triangular trusses. He creates a design for a truss with the following criteria: Each truss will form an isosceles triangle with legs AC and CE and will have an equilateral triangle (triangle FCG) inside.

After building the truss Joe needs to check that is will support the weight of the roof by measuring some of the segments and angles. He has a tape measure to measure the length of segments and a protractor to measure angles. Write a plan explaining to Joe the fewest number of measurements he should make to ensure the truss is stable. Stable means that ΔABF ΔEDG, ΔBFC ΔDGC, and ΔFCG is equilateral. Be specific about the segments (e.g. AB) to be measured, angles (e.g. angle BAF) to be measured, and congruency postulates or theorems used. Be creative, efficient, and justify your reasoning!

First Joe can Measure the sides of ΔFCG If he measures the 3 sides and gets the same length on all 3 sides are equal then that means ΔFCG is Equilateral Then we need to find out if ΔBCF and ΔDGC are congruent we can measure $\overline{BF}$ and $\overline{BC}$ we dont have to measure $\overline{CF}$ Sonce we measured it in ΔFCG then we have to do the same procedure in the oposite side. If the other sides are equal we can use side-Side-Side (SSS) it says that if all the sides are equal in both triangles then the two triangles must be equal. the last part is to prove if $\triangle ABF \cong \triangle EDG$ First we need to find $\angle BAF$ and $\angle DEG$ and get the angle since we already have $\overline{BF}$ and $\overline{DG}$ the only thing you would need is $\overline{AB}$ and $\overline{ED}$ then since we have 2 sides and an angle we can see if it is congruent Because SAS that says that if you have 2 Sides and an angle then the Two triangles are equal congruent. In this chapter I learned some congruency rules like ASA and SSS and some ways to prove it.

Formal Geometry Performance Task #2 Name _ ate 11-9-12

given 30 minutes

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onceptual_____ Procedural ____ Communication _ ALL _____

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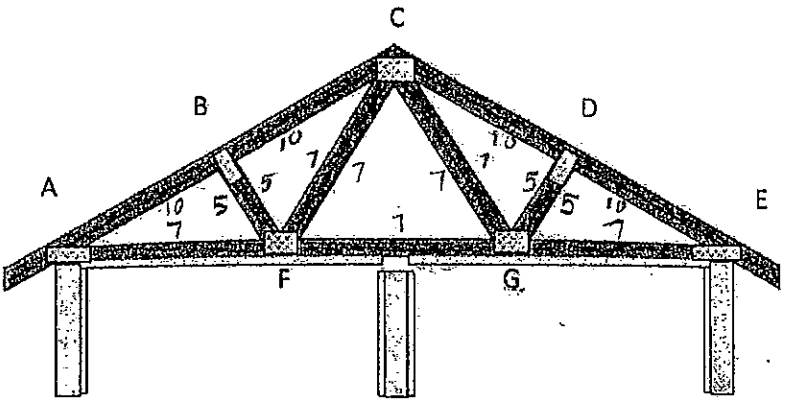

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Joe should start by making $\Delta ABF \cong \Delta EDG$, by that he needs to measures all the segments. He needs to make sure segment $\overline{AB}$ is congruent, meaning equal, to $\overline{ED}$. As soon as he does that, he checks that $\overline{BF}$ and $\overline{DG}$ are congruent and that $\overline{AF}$ and $\overline{GE}$ are congruent as well. If those two triangles are congruent there is a possibility the roof truss is stable. He repeats the same thing just with ΔBFC and ΔDGC. He checks for congruent sides on $\overline{BF}$ and $\overline{DG}$, $\overline{CD}$ and $\overline{BC}$, last but least $\overline{CF}$ and $\overline{CG}$. If they are congruent; then the roof truss is more likely to support the weight of the roof. At this point, all he needs to do is make sure ΔFCG is equilateral. He can check this by measuring all the sides and making sure they are all the same lenght. He can justify his answers by making note of all the mesure angles are the same for the corresponding angles. $\angle BAF, \angle ABF, \angle AFB$ should be congruent to $\angle DEG, \angle EDG, \angle EGD$. Then, $\angle BFC, \angle FBC, \angle BCF$ should be congruent to $\angle DGC, \angle GDC, \angle DCG$. Finally, $\angle FCG \cong CFG \cong \angle FGC$ should all be congruent so its equilateral. The roof truss can support the roof.

Formal Geometry Performance Task #2 Name ∠ 2 Date 11/9/12

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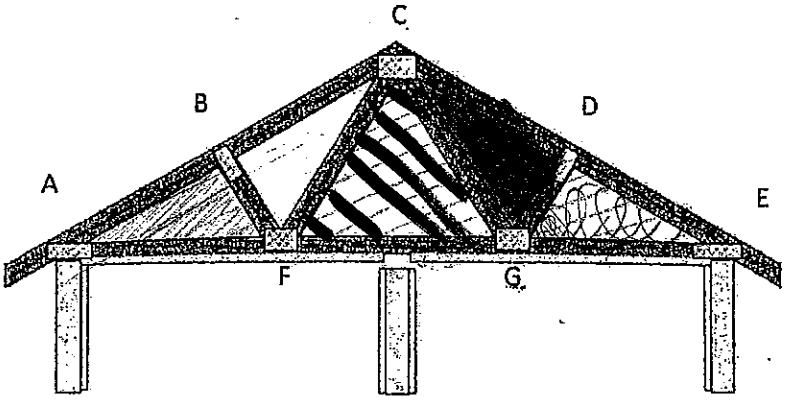
onceptual_____ Procedural ____ Communication __ OVERALL _____

This is a roof truss



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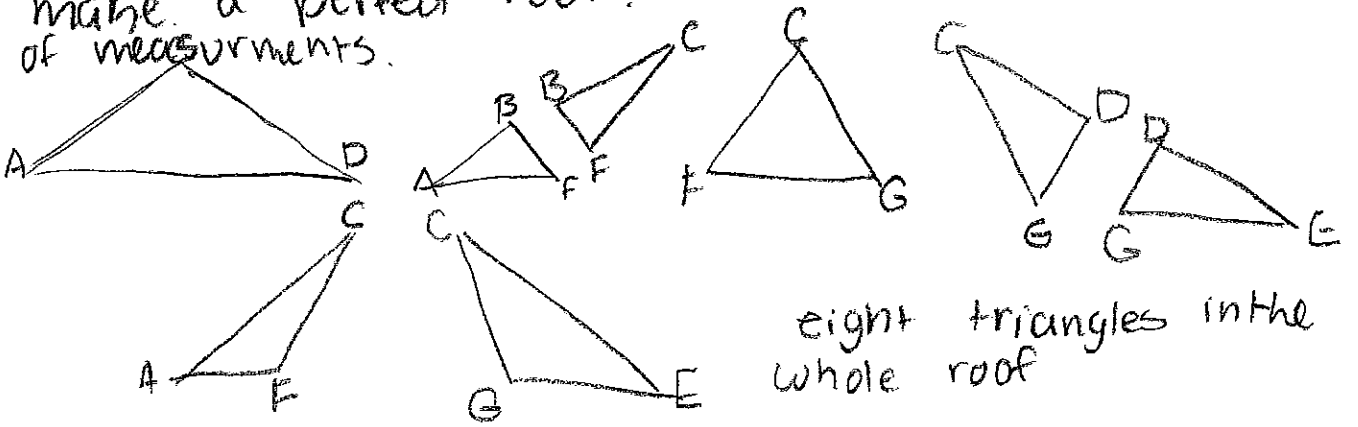

eight triangles in the whole roof

Formal Geometry Performance Task #2 Name _____ e _____

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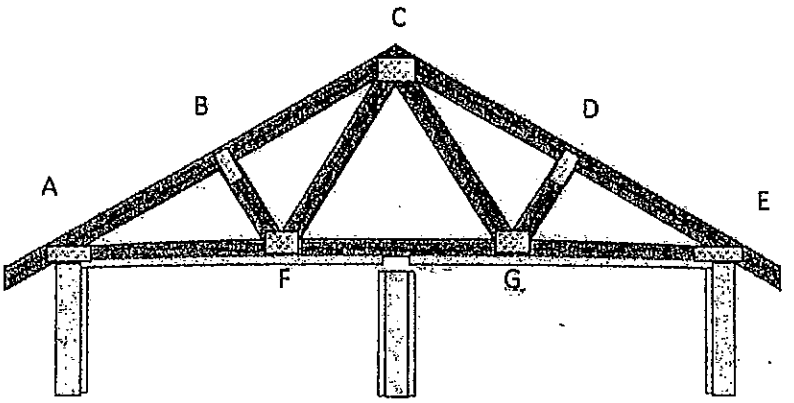

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First you have to measure each side to make sure them all eqval 180° If they do not equal 180 you are wrong, you have to set them up equally So they will fit together. One side is one twenty & if you can measure one they are all congruent. So all eqvals, which means they are all congrent.

Formal Geometry Performance Task #2 Nar

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Blind X

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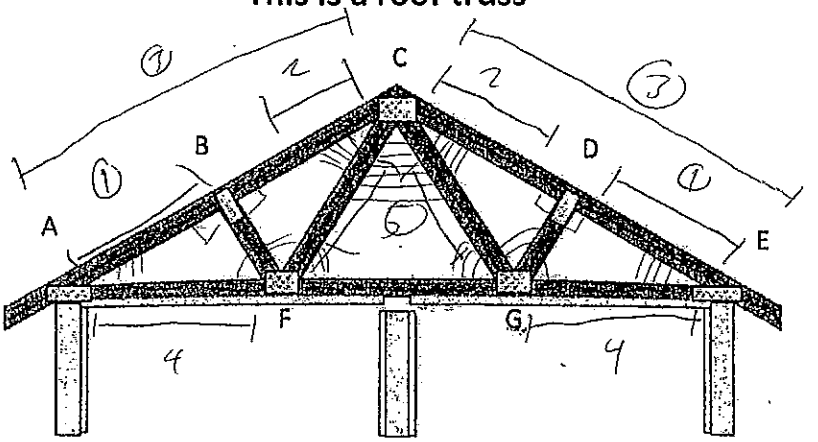

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~~$\angle A \cong \angle E$~~
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$\angle A \cong \angle E$
$\angle B \cong \angle D$
$\angle FAB \cong \angle GED$
$\triangle CBF \cong \triangle CDG$

$\angle B = 90$
$\angle D = 90$

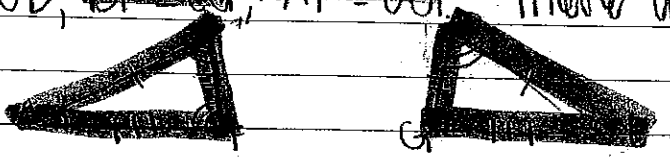
$\overline{AB} \cong \overline{ED}$
$\overline{BF} \cong \overline{DG}$
$\overline{FC} \cong \overline{FG}$
$\overline{AC} \cong \overline{EC}$
$\overline{CB} \cong \overline{CD}$

$\triangle CFA \cong \triangle CGE$
$\triangle EGC \cong \triangle AGC$

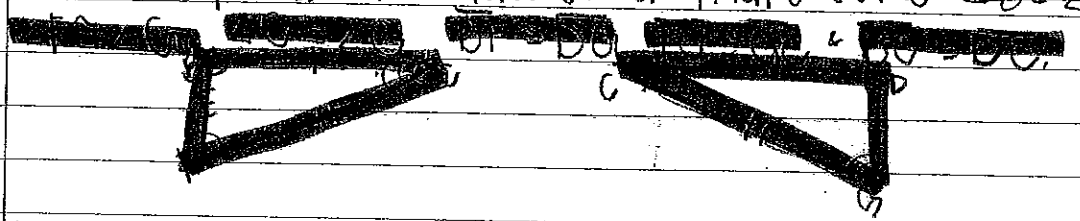
Joe hees to be sure that the supports can handle the weight of the roof so it does not collapse in on itself. The angles must equal 180° and that the triangles are the same size so that he can reflect one side of the roof. When all is complete he should double check the measurements. $\overline{AB} \cong \overline{ED}$

Blind Y

In order to find out if [redacted] you must do the following things. Make sure [redacted] AB = CD, [redacted] & [redacted]. There are isoceles triangles.



In order to find out if [redacted], follow the same steps as the first one. Make sure [redacted]



In order to find out if [redacted] is an [redacted] you must make sure all angles are 60°. In order for the triangle to be an equilateral, all sides must have 60° angles.

He needs to make sure his triangles are congruent. I would use side lengths. If he found all three side lengths he could easily recreate the exact same triangle. That could be used of either the equilateral triangles or the isoceles triangle.

Also, [redacted] to make sure, take the measurements for those two triangles as well. [redacted]

[redacted]

SWEETWATER
UNION HIGH SCHOOL DISTRICT

MATHEMATICS PERFORMANCE TASK RUBRIC

Criteria	1	2	3	4
Conceptual Understanding *Understanding the problem*	I didn't understand enough to get started or even make progress. Sample evidence for this problem:	I understood enough to solve part of the problem or to get part of a solution. Sample evidence for this problem:	I understood how the parts of the problem fit together and made partial sense of the problem before starting it. Sample evidence for this problem:	I understood how the parts of the problem fit together and made sense of the problem before starting it. Sample evidence for this problem:
Procedural Understanding *Strategic approach to problem-solving*	I presented no strategy or I used an inappropriate strategy. Sample evidence for this problem:	I used an appropriate strategy; however, I made errors in several steps and may have little evidence of organization. Sample evidence for this problem:	I used an appropriate strategy; however, I made minor errors in a few steps and organization may need improvement. Sample evidence for this problem:	I used an appropriate strategy. All steps are fully presented and well-organized. Sample evidence for this problem:

Criteria	1	2	3	4
Communicating Reasoning *Communicating logically*	I gave very little or no explanation of my reasoning. I used little or incorrect math vocabulary and/or notation. Sample evidence for this problem:	I gave little explanation of my reasoning for the decisions I made in solving the problem and I used limited math vocabulary and notation. Sample evidence for this problem:	I partially explained my reasoning for the decisions I made in solving the problem using at least one representation (written, graphic, pictorial or symbolic) and supported my explanation. I used some correct math vocabulary and notation throughout my explanation. Sample evidence for this problem:	I clearly and thoroughly explained my reasoning for the decisions I made in solving the problem using a variety of representations (written, graphic, pictorial or symbolic) and supported my explanation in a detailed and organized way. I used correct math vocabulary and notation throughout my explanation. Sample evidence for this problem:
Correct Answer	I provided no final answer, an irrelevant answer, or an answer that is completely inaccurate. Sample evidence for this problem:	I answered some questions correctly within the given context of the problem but had significant arithmetic errors. Sample evidence for this problem:	I answered most questions correctly within the given context of the problem, but had minor arithmetic errors, or paid partial attention to precision. Sample evidence for this problem:	I answered all questions correctly within the given context of the problem and attended to precision by using accurate units of measure, labels for axes on a coordinate plane, etc. Sample evidence for this problem: