

Eureka Math™

Exit Ticket Packet 2

Part B: Topics D–G

Geometry

Module 1

Topic D

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Topic G

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Topic E

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Topic F

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Printed in the U.S.A.

This book may be purchased from the publisher at eureka-math.org

10 9 8 7 6 5 4 3 2 1

ISBN 978-1-63255-538-0



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Name _____

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Lesson 22: Congruence Criteria for Triangles—SAS

Exit Ticket

If two triangles satisfy the SAS criteria, describe the rigid motion(s) that would map one onto the other in the following cases.

1. The two triangles share a single common vertex.

2. The two triangles are distinct from each other.

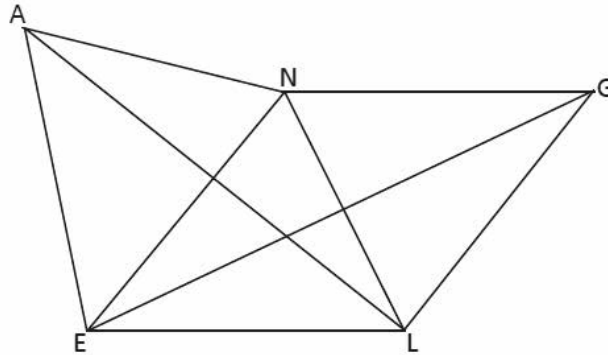
3. The two triangles share a common side.

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Lesson 23: Base Angles of Isosceles Triangles

Exit Ticket



For each of the following, if the given congruence exists, name the isosceles triangle and the pair of congruent angles for the triangle based on the image above.

1. $\overline{AE} \cong \overline{LE}$

2. $\overline{LE} \cong \overline{LG}$

3. $\overline{AN} \cong \overline{LN}$

4. $\overline{EN} \cong \overline{GN}$

5. $\overline{NG} \cong \overline{LG}$

6. $\overline{AE} \cong \overline{NE}$

Name _____

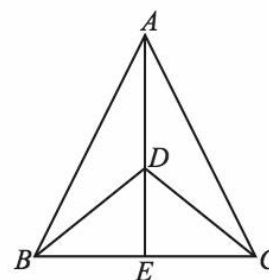
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Lesson 24: Congruence Criteria for Triangles—ASA and SSS

Exit Ticket

Based on the information provided, determine whether a congruence exists between triangles. If a congruence exists between triangles or if multiple congruencies exist, state the congruencies and the criteria used to determine them.

Given: $BD = CD$, E is the midpoint of \overline{BC}



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Lesson 25: Congruence Criteria for Triangles—AAS and HL

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1. Sketch an example of two triangles that meet the AAA criteria but are not congruent.
2. Sketch an example of two triangles that meet the SSA criteria that are not congruent.

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Lesson 26: Triangle Congruency Proofs

Exit Ticket

Identify the two triangle congruence criteria that do NOT guarantee congruence. Explain why they do not guarantee congruence, and provide illustrations that support your reasoning.

Name _____

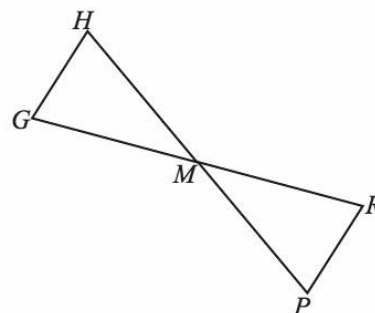
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Lesson 27: Triangle Congruency Proofs

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Given: M is the midpoint of \overline{GR} , $\angle G \cong \angle R$

Prove: $\triangle GHM \cong \triangle RPM$



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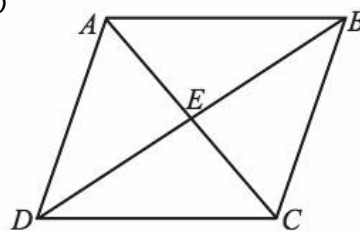
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Lesson 28: Properties of Parallelograms

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Given: Equilateral parallelogram $ABCD$ (i.e., a rhombus) with diagonals \overline{AC} and \overline{BD}

Prove: Diagonals intersect perpendicularly.



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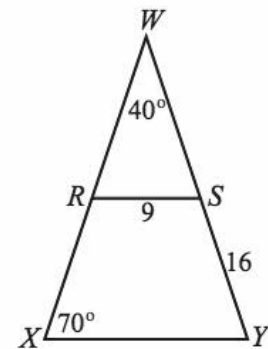
Lesson 29: Special Lines in Triangles

Exit Ticket

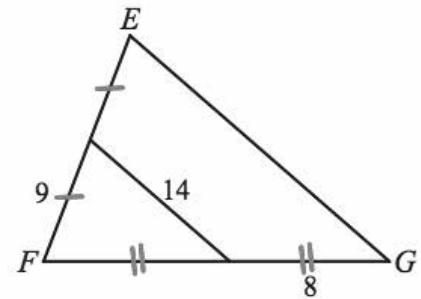
Use the properties of midsegments to solve for the unknown value in each question.

1. R and S are the midpoints of \overline{XW} and \overline{WY} , respectively.

What is the perimeter of $\triangle WXY$? _____



2. What is the perimeter of $\triangle EFG$? _____



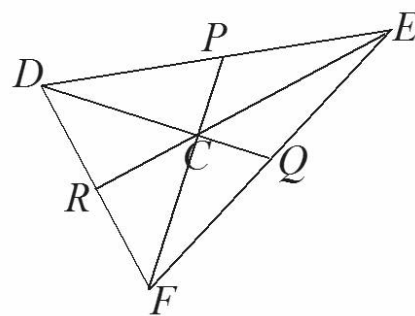
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Lesson 30: Special Lines in Triangles

Exit Ticket

\overline{DQ} , \overline{FP} , and \overline{RE} are all medians of $\triangle DEF$, and C is the centroid. $DQ = 24$, $FC = 10$, $RC = 7$. Find DC , CQ , FP , and CE .



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Lesson 31: Construct a Square and a Nine-Point Circle

Exit Ticket

Construct a square $ABCD$ and a square $AXYZ$ so that \overline{AB} contains X and \overline{AD} contains Z .

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Lesson 32: Construct a Nine-Point Circle

Exit Ticket

Construct a nine-point circle, and then inscribe a square in the circle (so that the vertices of the square are on the circle).

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Lesson 33: Review of the Assumptions

Exit Ticket

1. Which assumption(s) must be used to prove that vertical angles are congruent?
2. If two lines are cut by a transversal such that corresponding angles are NOT congruent, what must be true? Justify your response.

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Lesson 34: Review of the Assumptions

Exit Ticket

The inner parallelogram in the figure is formed from the midsegments of the four triangles created by the outer parallelogram's diagonals. The lengths of the smaller and larger midsegments are as indicated. If the perimeter of the outer parallelogram is 40, find the value of x .

