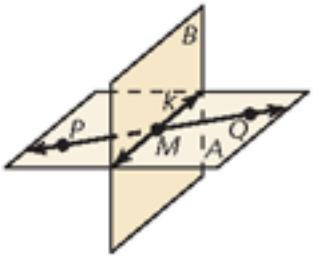
Name:_____ Date:_____ Band:_____
Geometry

Geometry Practice Midterm

Unit 1: Basics of Geometry

1.1 Points, Lines, and Planes

Use the diagram for #1-7.



1. Name three collinear points. **2.** Name 3 coplanar points. **3.** Name a pair of opposite rays.

4. Give another name for $\overleftrightarrow{PQ}$. **5.** Give another name for $\overrightarrow{PM}$.

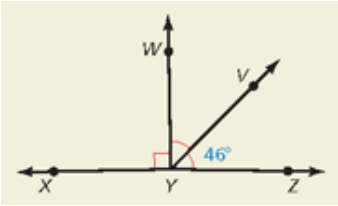
6. Name the intersection of Plane A and Plane B. **7.** Name the intersection of line k and $\overleftrightarrow{PQ}$.

1.2 Measuring and Constructing Segments

8. If $AC = 23$, find x.

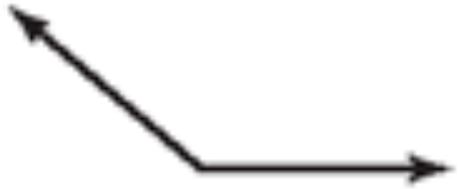
1.5 Measuring and Constructing Angles

Use the diagram for #9-11. $\angle XYZ$ is a straight angle. $\overline{XY} \cong \overline{ZY}$.

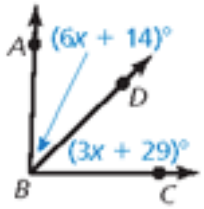


9. If $XY = 4x - 1$ and $YZ = 3x + 3$, find XZ. **10.** Find $m\angle XYV$. **11.** Find $m\angle WYV$.

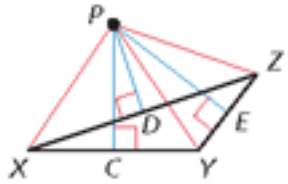
12. Construct the angle bisector of the given angle.



13. $\overrightarrow{BD}$ bisects $\angle ABC$. Find $m\angle ABD$.

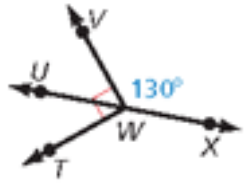


14. Use the diagram to name an acute, obtuse, right, and straight angle.

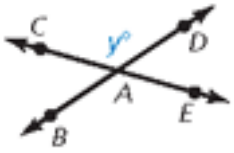


1.6 Describing Pairs of Angles

15. Find $m\angle TWU$.



16. $m\angle DAE = 3x + 5, m\angle BAE = 10x - 7$. Find x and y.



Unit 2: Reasoning and Proof

2.1 Conditional Statements

17. Write the converse, inverse, contrapositive, and biconditional of the given conditional statement: If an angle is a right angle, then its measure is $90°$.

2.2 Inductive and Deductive Reasoning

Decide if the statement is true or false. If false, find a counterexample.

18. If two angles are supplements of each other, then one of the angles must be acute.

19. If a figure has four sides, then it is a rectangle.

Make a conclusion from the given information. State the law you used.

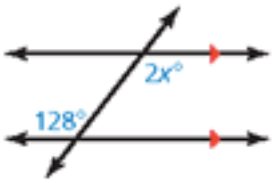
20. If you pass the midterm, then you pass the class. You passed the midterm.

21. If you study hard, then you will pass the midterm. If you pass the midterm, then you will pass the class.

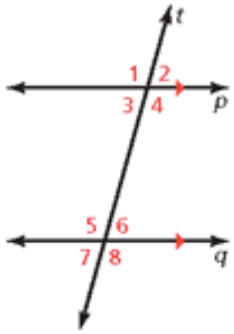
Unit 3: Parallel and Perpendicular Lines

3.2 Parallel Lines and Transversals

22. Find the value of x.



Use the diagram for #23-26.



23. Name a pair of corresponding angles.

24. Name a pair of alternate interior angles.

25. Name a pair of alternate exterior angles.

26. Name a pair of consecutive interior angles.

3.4 Proofs with Perpendicular Lines

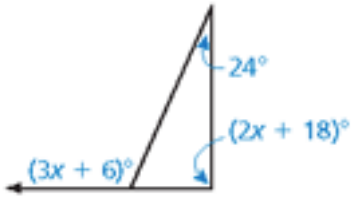
27. Construct the perpendicular bisector of $\overline{AB}$.

Unit 4: Congruent Triangles

4.1 Angles of Triangles

28. The measures of the angles of a triangle are x, $3x$, and $3x - 30$. Find the value of x. Classify the triangle by its angles.

29. Find the measure of the exterior angle. What theorem did you use?



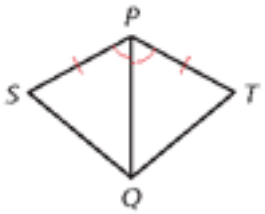
4.2 Congruent Polygons

30. $\Delta JKL \cong \Delta TSR$. Identify all pairs of congruent corresponding parts.

4.3-4.6 Proving Triangle Congruence by SAS, SSS, ASA, AAS, and HL

#31-36: Determine which theorem can be used to prove that the triangles are congruent. If it is not possible, write not possible.

31.



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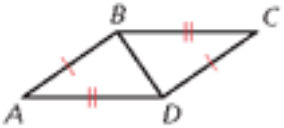

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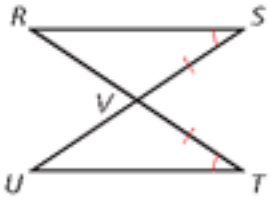

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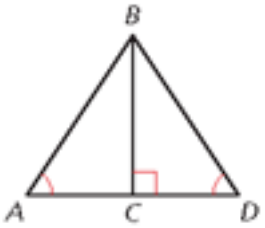

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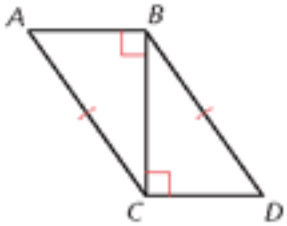

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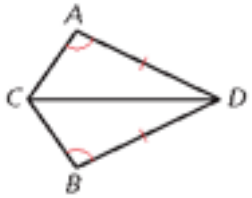
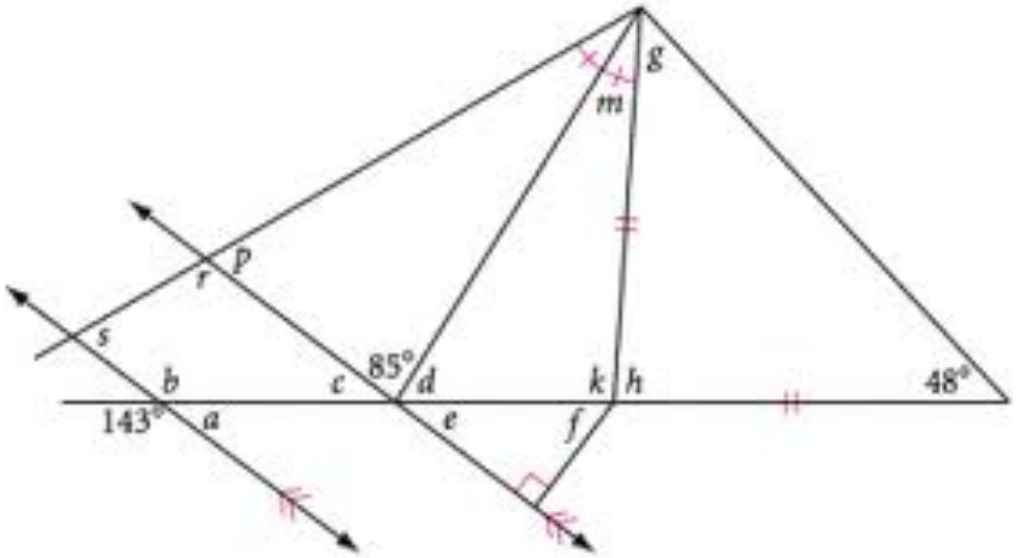


4.4 Equilateral and Isosceles Triangles

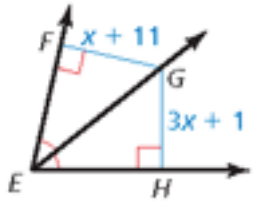
37. Find the measures of all the lettered angles in the diagram.



Unit 5: Relationships Within Triangles

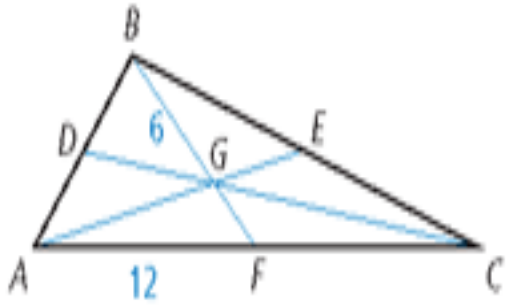
5.1 Perpendicular and Angle Bisectors

38. Find x.



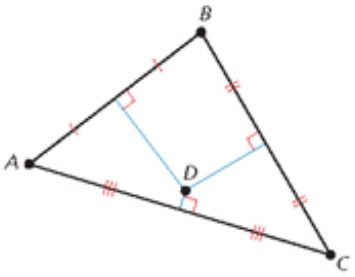
5.2-5.3 Bisectors, Medians and Altitudes of Triangles

39. Point G is the centroid of ΔABC. $BG = 6, AF = 12$, and $AE = 15$. Find FC, BF, AG, and GE.

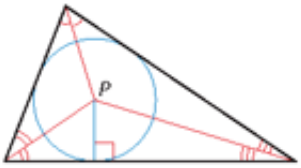


#40-43: Name the point of concurrency in the diagram.

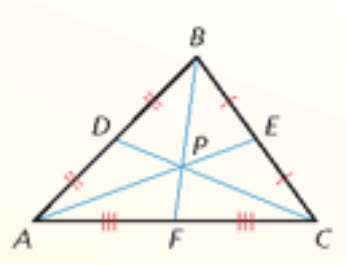
40. Point D



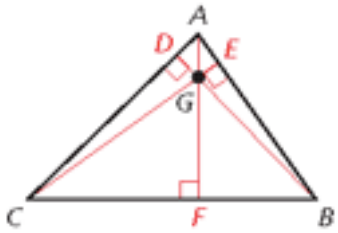
41. Point P



42. Point P

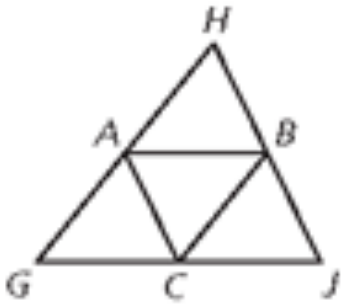


43. Point G



5.4 The Triangle Midsegment Theorem

44. In ΔGHJ, A, B, and C are midpoints of the sides. $AB = 14, HB = 13$, and $GA = 17$. Find the perimeter of ΔABC.



5.5 Inequalities in One Triangle

45. A triangle has one side of length 14 and another side of length 9. Describe the possible lengths of the third side.

PROOFS

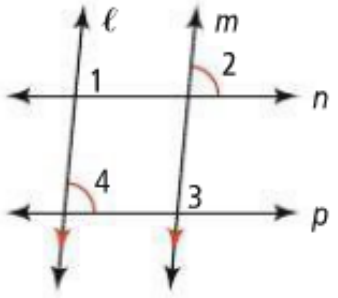
Write a proof.

46. Given: $2(x + 3) = 5x + 9$

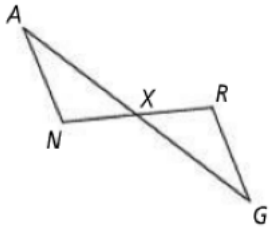
Prove: $x = -1$

47. Given: $l \parallel m, \angle 2 \cong \angle 4$

Prove: $n \parallel p$



48. Given: $\overline{AG}$ and $\overline{NR}$ bisect each other at point X
Prove: $\Delta AXN \cong \Delta GRX$



49. Given: $\overline{BC} \cong \overline{DA}, \overline{BC} \parallel \overline{AD}$
Prove: $\overline{BA} \cong \overline{DC}$