

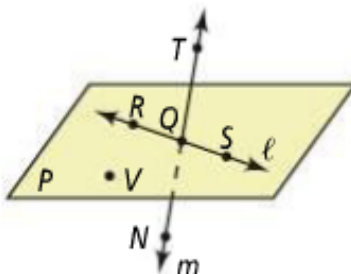
Name: _____
 Geometry

Date: _____
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Geometry Fall Practice PBA

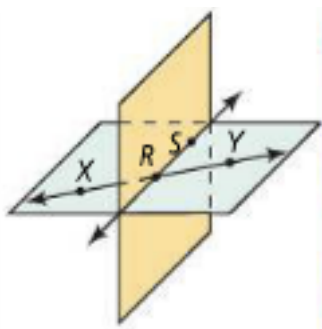
Unit 1: Tools of Geometry

Use the diagram for #1-8.



1. What are two other ways to name \overrightarrow{QT} ?
2. What are two other ways to name plane P ?
3. What are the names of three collinear points?
4. What are the names of four coplanar points?
5. What are two points that are NOT coplanar with points $R, S,$ and V ?
6. What are the names of the segments in the figure?
7. What are the names of the rays in the figure?
8. Which of the rays in #7 are opposite rays?

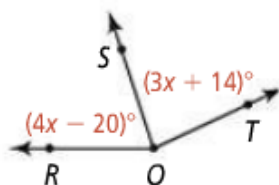
Use the diagram for #9-12.



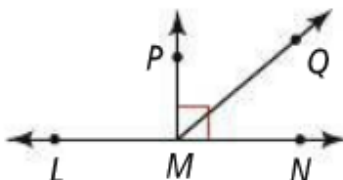
9. What are two other names for \overleftrightarrow{XY} ?
10. What are the opposite rays?
11. What is the intersection of the two planes?
12. If $EG = 59$, what are EF and FG ?



13. \overrightarrow{OS} bisects $\angle ROT$, what are $m\angle ROS$ and $m\angle TOS$?

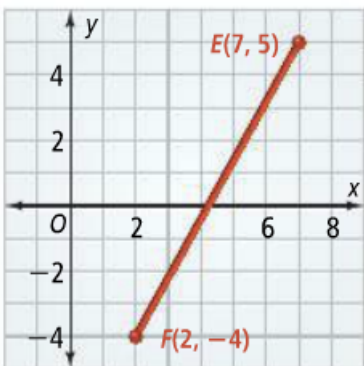


Use the diagram for #14-16. Is the statement true? Explain.



14. M is the midpoint of \overline{LN} . $LM = 3x$ and $MN = 5x - 6$, find LN .
 15. If $m\angle LMQ = 120$, find $m\angle PMQ$.
 16. Find $m\angle QMN$.

Use the diagram for #17-18.



17. Find the midpoint of \overline{EF} .
 18. Find the length of \overline{EF} .

Unit 2: Reasoning and Proof

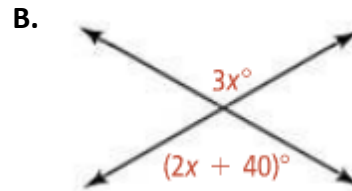
- What is the converse of the following true conditional? If the converse is also true, rewrite the statement as a biconditional.
 “If the sum of the measures of two angles is 180, then the two angles are supplementary.”
- What is the converse of the following true conditional? If the converse is also true, rewrite the statement as a biconditional.
 “If two angles have equal measures, then the angles are congruent.”

Use the Law of Detachment or the Law of Syllogism to make a conclusion.

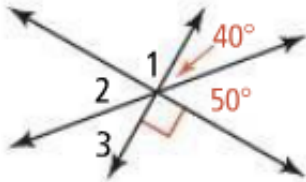
- If three points lie on the same line, then they are collinear. Points $X, Y,$ and Z are on line m .
- If an angle is obtuse, then it is not acute. $\angle XYZ$ is obtuse.

5. If a line intersects a segment at its midpoint, then the line bisects the segment. If a line bisects a segment, then it divides the segment into two congruent segments.
6. If a polygon is a pentagon, then it has one more side than a quadrilateral. If a polygon has one more side than a quadrilateral, then it has two more sides than a triangle.

3. What is the value of x ?



4. What are the measures of $\angle 1$, $\angle 2$, and $\angle 3$?



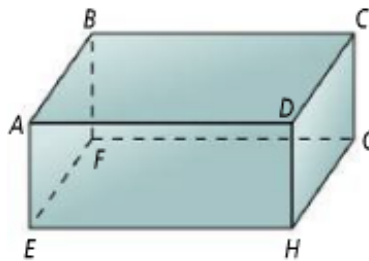
5. **PROOF:**

Given: $5(x + 3) = -4$

Prove: $x = -\frac{19}{5}$

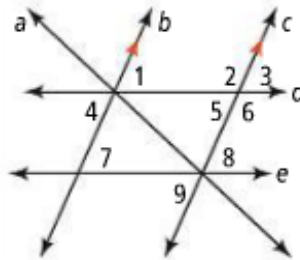
Unit 3: Parallel and Perpendicular Lines

Use the figure for #1-8.



1. Which segments are parallel to \overline{AB} ?
2. Which segments are skew to \overline{CD} ?
3. What are two pairs of parallel planes?
4. What are two segments parallel to plane $BCGF$?
5. Which segments are parallel to \overline{AD} ?
6. Explain why \overline{FE} and \overline{CD} are NOT skew.
7. What segment is perpendicular to \overline{CG} ?
8. What are two segments parallel to $DCGH$?

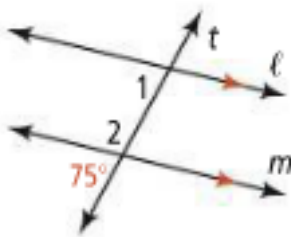
Use the diagram for #9-16 Identify each pair of angles.



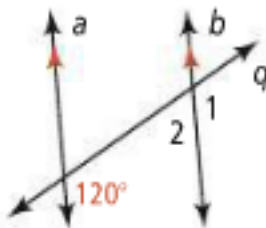
- 9. Linear Pair
- 10. Vertical
- 11. Consecutive or Same-Side Interior
- 12. Corresponding
- 13. Alternate Interior
- 14. Alternate Exterior
- 15. Complementary
- 16. Supplementary

Find $m\angle 1$ and $m\angle 2$. Justify your answer with a postulate or theorem.

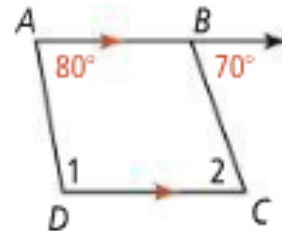
17.



18.



19.

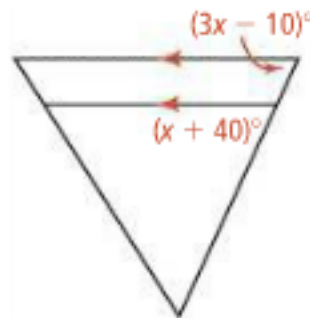


Find the value of x .

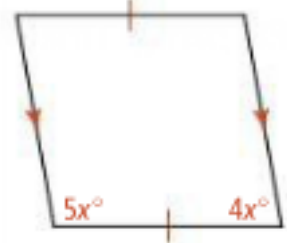
20.



21.

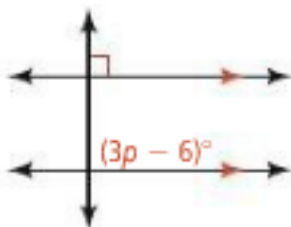


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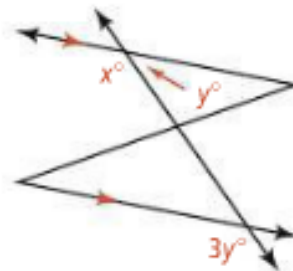


Find the value of the variables.

23.



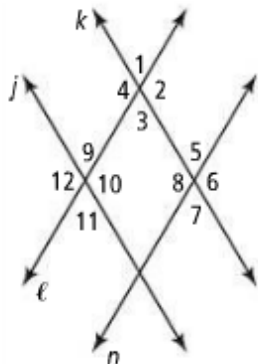
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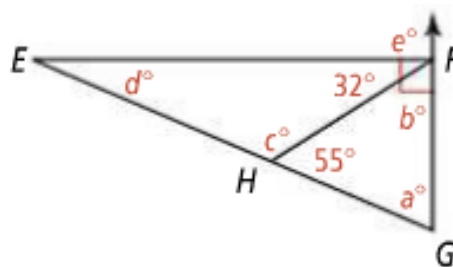
25. PROOF:

Given: $j \parallel k$, $\angle 9 \cong \angle 5$

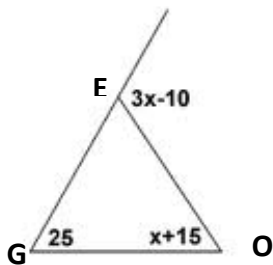
Prove: $l \parallel n$



26. What are the values of the variables in the diagram?



27. What is $m\angle GEO$? What theorem did you use?



Find the slope of each line. Are l_1 and l_2 parallel, perpendicular, or neither? Write the equation of each line.

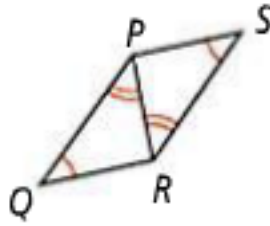
22. $l_1: (0, -2)$ and $(4, -4)$
 $l_2: (4, 1)$ and $(1, -5)$

23. $l_1: (-3, 4)$ and $(1, -2)$
 $l_2: (-4, 0)$ and $(2, 4)$

24. $l_1: (-2, 5)$ and $(-3, 1)$
 $l_2: (0, -2)$ and $(1, 2)$

Unit 4: Congruent Triangles

The diagram shows a pair of congruent triangles. Use the diagram for #1-6.



1. $\overline{PS} \cong$ _____

2. $\overline{QP} \cong$ _____

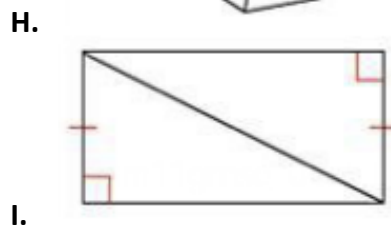
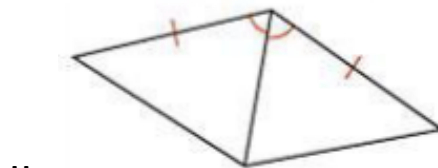
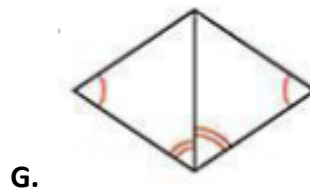
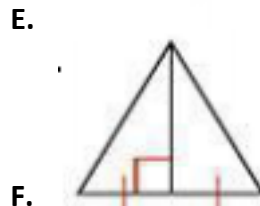
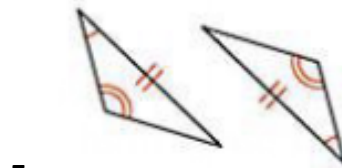
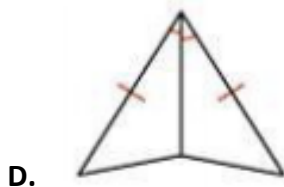
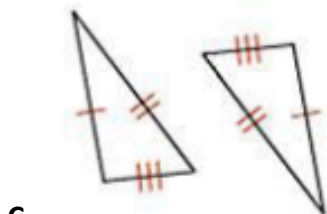
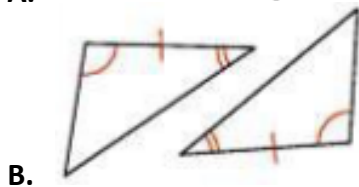
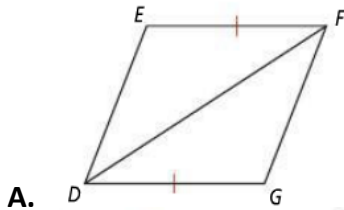
3. $\overline{PR} \cong$ _____

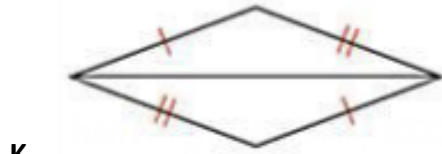
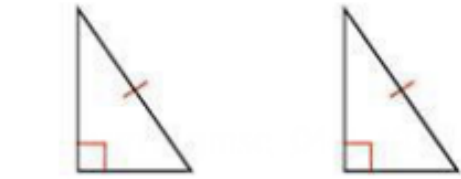
4. $\angle Q \cong$ _____

5. $\angle QPR \cong$ _____

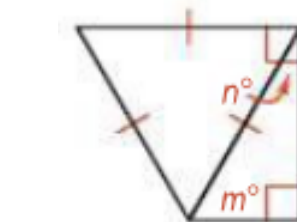
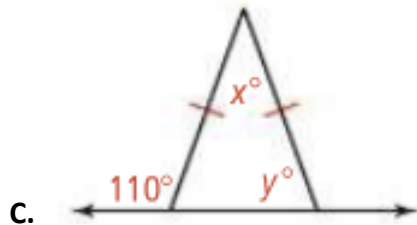
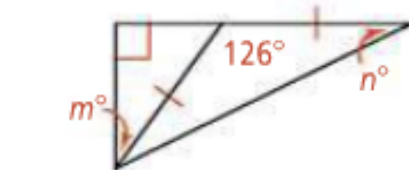
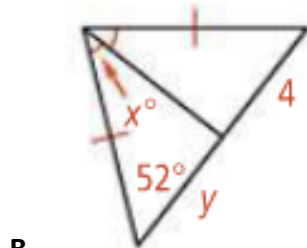
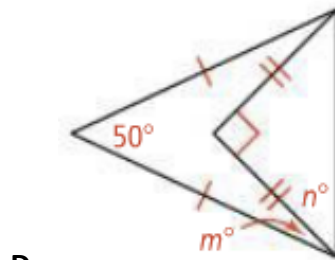
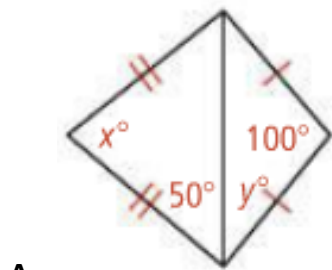
6. $\angle SPR \cong$ _____

7. State the postulate or theorem you can use to prove the triangles congruent. If you do not have enough information to prove the triangles congruent, write *not enough information*.

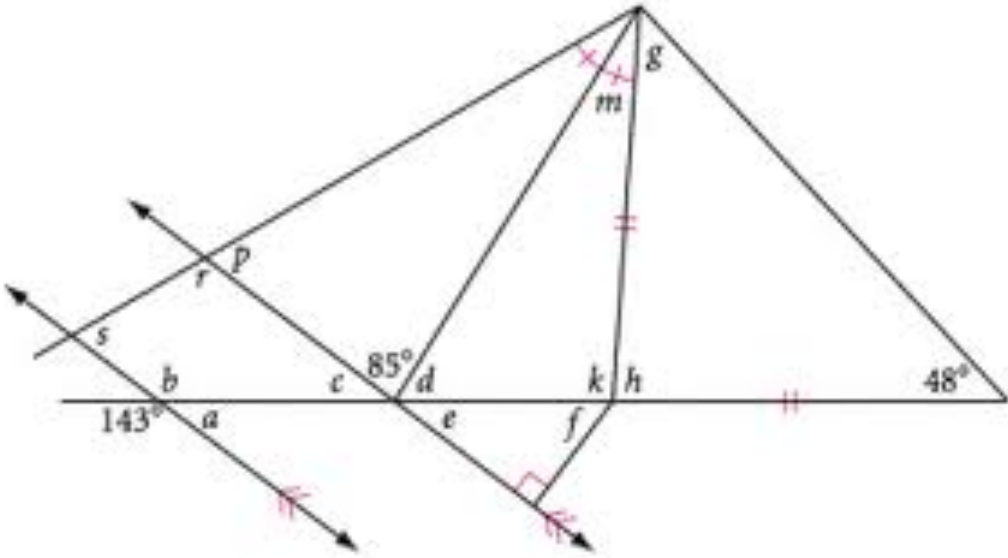




8. What are the values of x and y ?

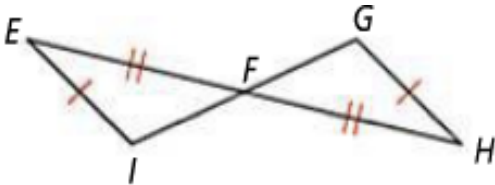


9. ANGLE PUZZLE: Find the measures of ALL the letter angles in the diagram.



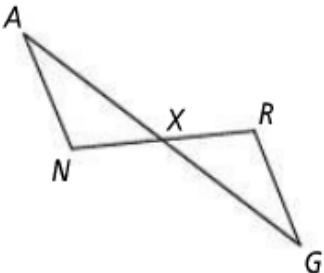
10. PROOF

Given: $\overline{IE} \cong \overline{GH}$, $\overline{EF} \cong \overline{HF}$, F is the midpoint of \overline{GI}
 Prove: $\triangle EFI \cong \triangle HFG$



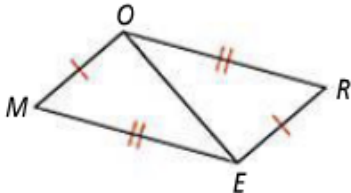
11. PROOF

Given: \overline{AG} and \overline{NR} bisect each other at point M
 Prove: $\triangle DMA \cong \triangle CMB$



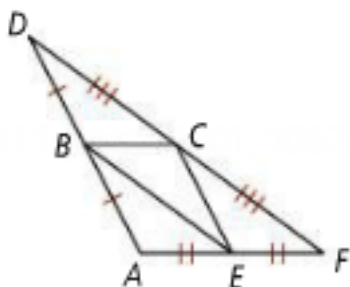
12. PROOF

Given: $\overline{OR} \parallel \overline{EM}$, $\overline{MO} \parallel \overline{ER}$
 Prove: $\overline{OR} \cong \overline{EM}$



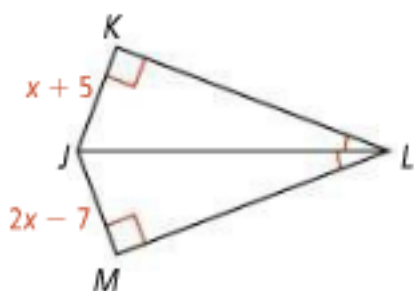
Unit 5: Relationships Within Triangles

1. $DF = 24$, $BC = 6$, and $DB = 8$. Find the perimeter of $\triangle ADF$.

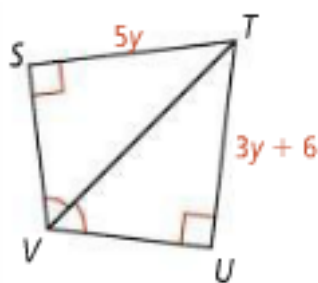


2. Find x .

A.

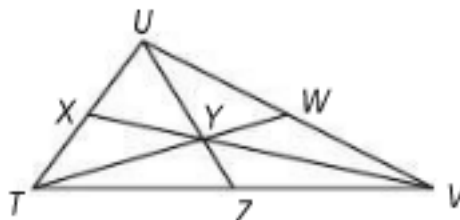


B.



3. In $\triangle TUV$, Y is the centroid.

- A. If $YW = 9$, find TY and TW .
- B. If $YU = 9$, find ZY and ZU .
- C. If $VX = 9$, find VY and YX .



The lengths of two sides of a triangle are given. Find the range of the possible lengths for the third side.

- 4. 8 ft, 12 ft
- 5. 5 in, 16 in
- 6. 6 cm, 6 cm
- 7. 18 m, 23 m
- 8. 4 yd, 7 yd
- 9. 20 km, 35 km