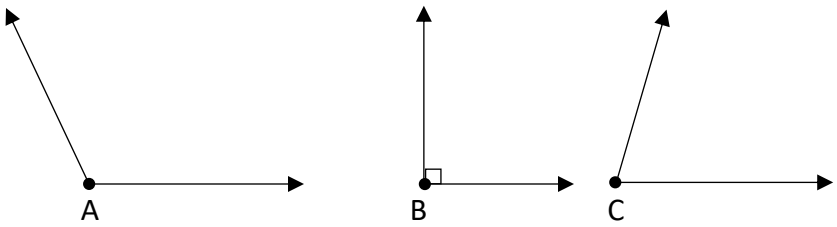
Name _____ Date _____

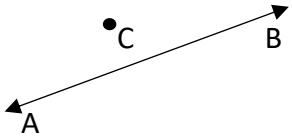
Supplemental Worksheet
Volume 7 Lesson 1

Use $\angle A, \angle B, and\ \angle C$ below to answer problems 1 - 5.

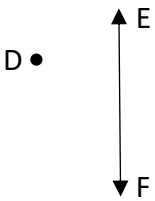


1. Which angle is an Obtuse Angle? _____
2. The $\measuredangle B =$ _____
3. Which angle is most likely to measure $100°$? _____
4. Which angle is an Acute Angle? _____
5. Which angle is a Right Angle? _____

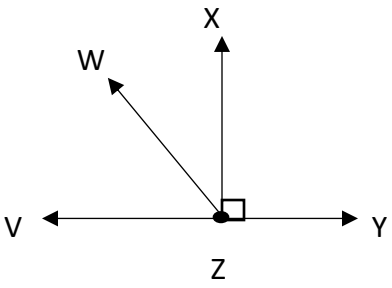
6. Draw the only line that can pass through point C AND be parallel to $\overline{AB}$.



7. Draw the only line that can both pass through point D and be perpendicular to $\overline{EF}$.



8. The vertex of $\angle WZY\ is$ _____.
9. The angle adjacent to $\angle VZW\ is\ \angle$_____.
10. $\measuredangle VY =$ _____°



Supplemental Worksheet
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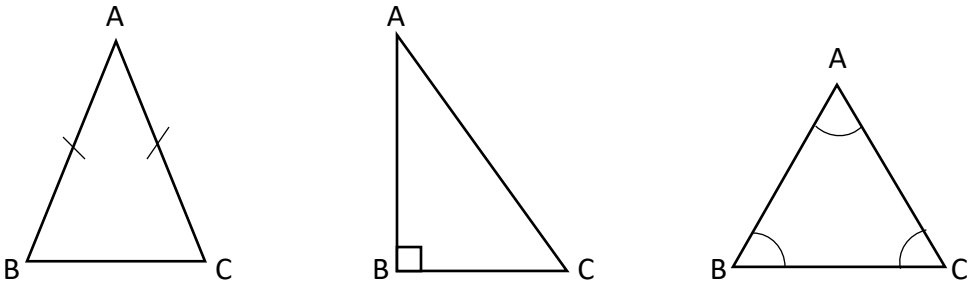
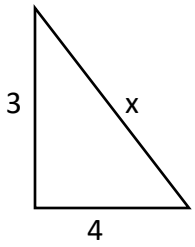


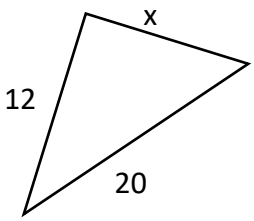
11. In the Isosceles Triangle above, if side AB = 12, then side AC = _____.
12. In the Equilateral Triangle above, what is the measurement of $\angle B$?
13. In the Right triangle above, the hypotenuse is side _____.
14. In the Right Triangle above, if $\measuredangle A = 40°$, then $\measuredangle C =$ _____.
15. In the Isosceles Triangle above, if $\measuredangle A = 70°$, then $\measuredangle C =$ _____.
16. In the Equilateral Triangle above, if side BC = 8, then side AC = _____.
17. One of the three triangles above is a scalene triangle. Is it an obtuse, acute, or right scalene triangle? _____

The Pythagorean Theorem is $a^2 + b^2 = c^2$. Use it to find the length of missing side in each triangle.

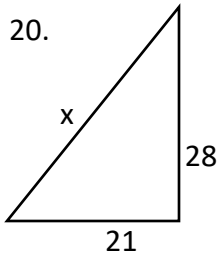
18.



19.



20.



Name _____ Date _____

Supplemental Worksheet
Volume 7 Lesson 2

1. $\angle A \text{ is complementary to } \angle B.\ If\ \measuredangle A = 40, then\ \measuredangle B =$ _____
2. $\angle K \text{ is supplementary to } \angle J.\ If\ \measuredangle K = 89, then\ \measuredangle J =$ _____
3. $\angle A \text{ and } \angle B \text{ are supplementary.}\ If\ \measuredangle A = 100, then\ \measuredangle b =$ _____
4. Draw a pair of adjacent angles that are also supplementary and congruent.

5. Draw a pair of adjacent angles that are also complementary and congruent.

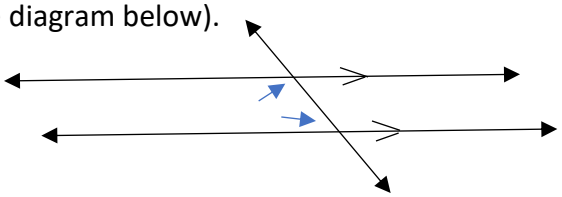
Fill in the blank to complete the theorem.

6. If the exterior sides of a pair of adjacent angles are perpendicular, then the angles are _____.

7. If the exterior sides of a pair of adjacent angles form a straight line, then the angles are _____.

8. If two angles are congruent and supplementary, then both angles are _____ angles.

9. If two lines are parallel, then the interior angles on the same side of the transversal are _____. (See diagram below).



Supplemental Worksheet
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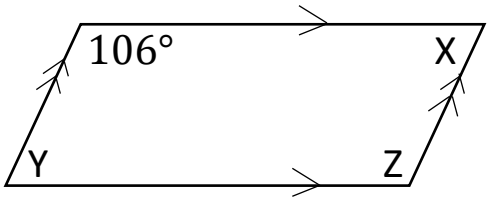
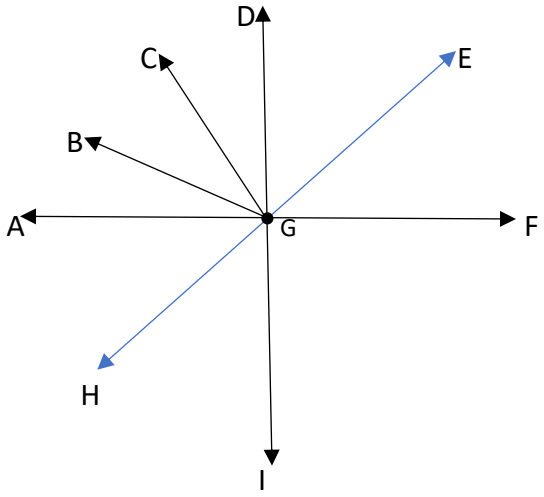


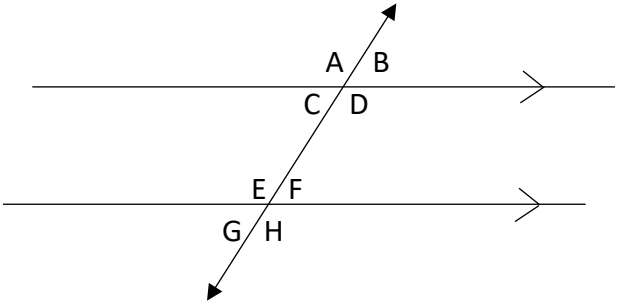
10. $\measuredangle X =$ _____
    $\measuredangle Y =$ _____
    $\measuredangle Z =$ _____



11. Name an angle that is opposite $\angle AGI$. _____
12. Name an angle that is supplement to $\angle EGF$. _____
13. Name an angle that is complementary to $\angle HGI$. _____
14. If $\angle FGI = 90°, then\ \angle DGA =$ _____°
15. If $DGE = 40°, then\ \angle HGI =$ _____°?
16. $\angle AGB$ is complementary to $\angle BGD$. If $\angle AGB = 30°$, then $\angle BGD =$ _____.
17. $\angle AGC$ is supplemental to $\angle CGF$.
    $If\ AGC = (12x - 19)\ and\ \angle CGF = (20x + 7), solve\ for\ x.$

Supplemental Worksheet
Volume 7 Lesson 2 page 3

Use the picture below to answer problems 18 – 23.



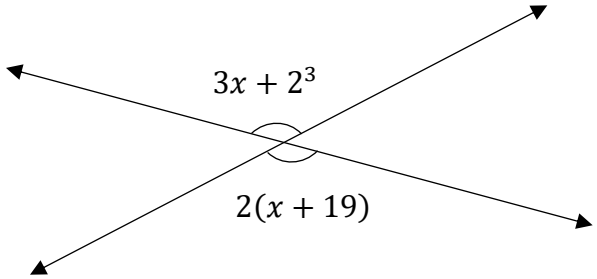
18. If $\measuredangle A = 110$, then $\measuredangle D =$ _____.
19. If $\angle C = 80°$, then $\angle E =$ _____.
20. If $\angle H = 108°$, then $\angle D =$ _____.
21. If $\angle B = 85°$, then $\angle G =$ _____.
22. If $\angle A = 102°$, *then* $\angle H =$ _____.
23. If $\angle F = 76°$, *then* $\angle D =$ _____.

24. Given: $\angle A \cong \angle B$

    $\angle A$ *is complementary to* $\angle B$

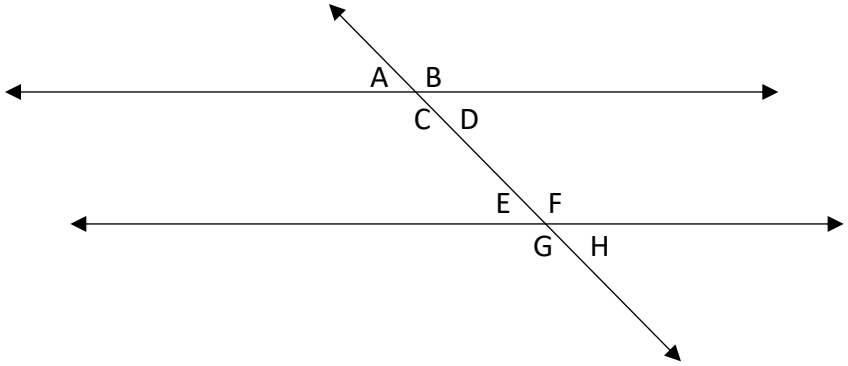
    Solve: $\measuredangle B =$ _____.

25. Solve for x in the picture below. X = _____



Name _____ Date _____

Supplemental Worksheet
Volume 7 Lesson 3



Use the drawing above to answer problems 1 – 6

26. Write the theorem that proves $\measuredangle A = \measuredangle D$.

_____

27. Write the theorem that proves $\angle D \; is \; supplementary \; to \; \angle F$.

_____

28. If $\angle E = 40°, \; then \; \angle C =$ _____

29. If $\angle B = 120°, \; then \; \angle A =$ _____ $and \; \angle C =$ _____

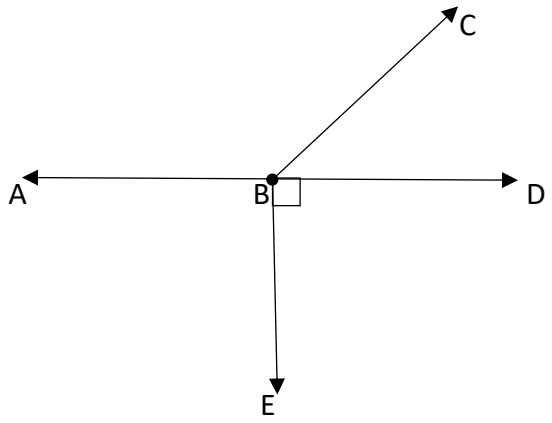
30. If $\angle B = 117°, \; then \; \angle G =$ _____

31. Name all the angles, in the picture above, that are equal to $\angle H$.

_____

Supplemental Worksheet
Volume 7 Lesson 3 page 2

Use the picture below to answer questions 7 – 10.



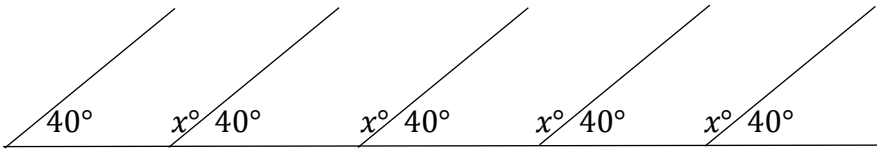
32. Which two lines are perpendicular? _____
33. Name an angle that is supplement to $\angle ABC$. _____
34. What is the measure of $\angle AD$? _____
35. If $\angle CBD = 48°, then\ \angle ABC =$ _____°

Fill in the blank to complete the theorem properly.

36. If two angles are _____ and congruent, then they both measure $45°$.
37. If two angles are _____ and congruent, then they both measure $90°$.
38. If the exterior sides of two _____ angles form a right angle, then those angles are _____.
39. If the _____ sides of two _____ angles form a _____, then those angles are supplementary.

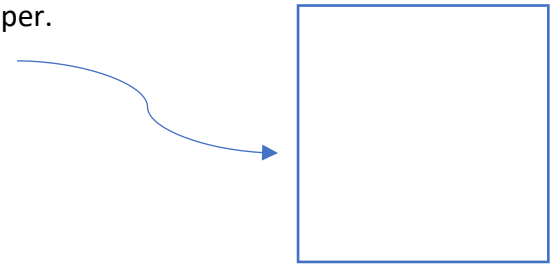
Use the pictures to answer the following questions.

40. $x =$ _____

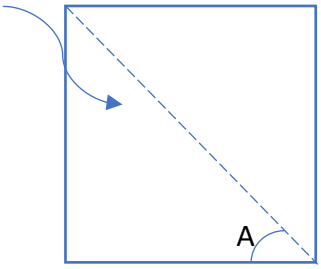


Supplemental Worksheet
Volume 7 Lesson 3 page 3

You are given a square piece of paper.



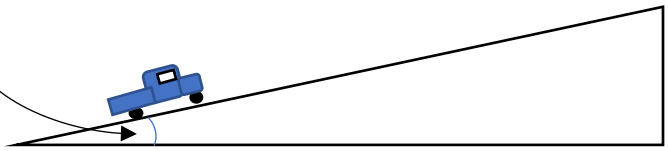
If you fold it in half, diagonally, it will leave a crease here.



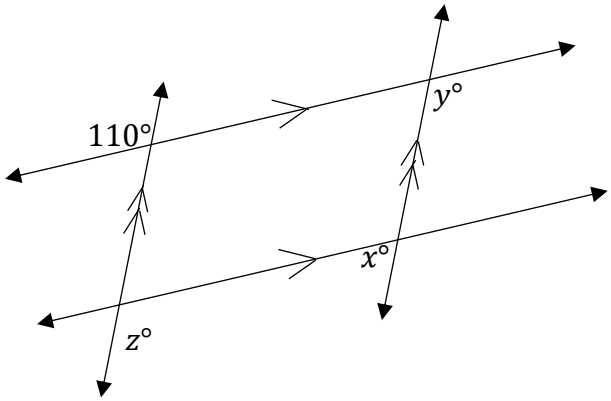
41. What is the measure of angle A?_____

42. A truck is driving up a hill, like the one drawn below. What is most likely the measurement of this angle?

$A.\ 80°\quad B.\ 15°\quad C.\ 63°$

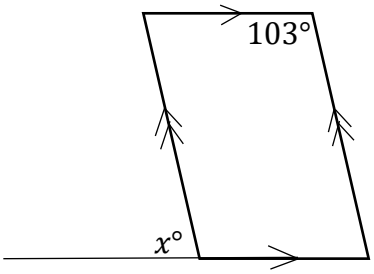


43. $\angle X =$ _____.
$\angle Y =$ _____.
$\angle Z =$ _____.

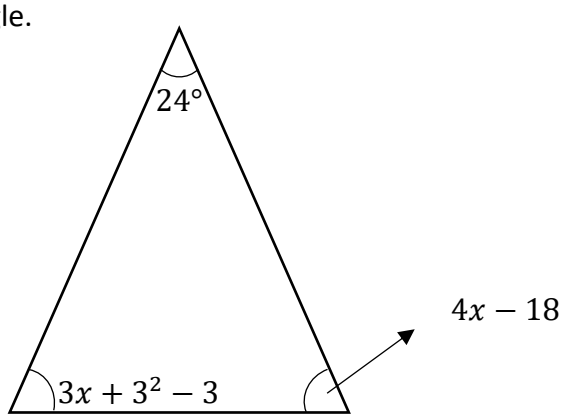


Supplemental Worksheet
Volume 7 Lesson 3 page 4

44. In the picture to the right, $x =$ _____°



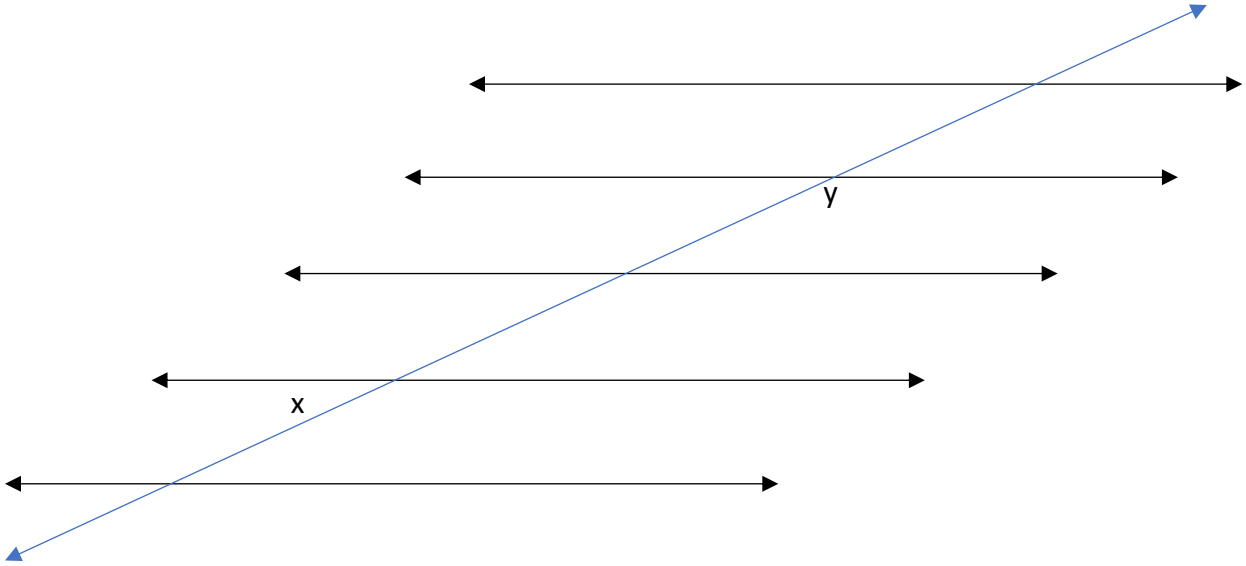
45. Solve for x in the Isosceles triangle.



Name _____ Date _____

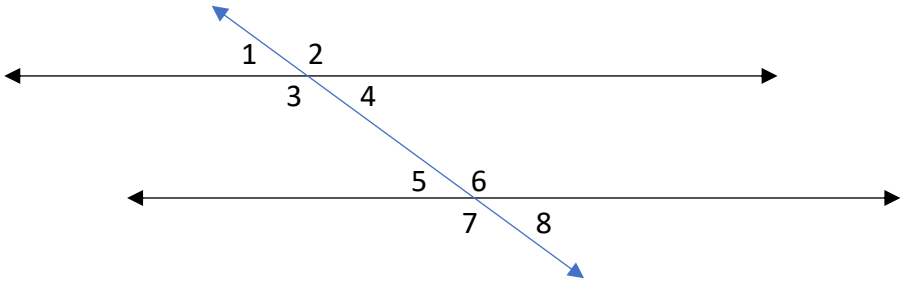
Supplemental Worksheet
Volume 7 Lesson 4 page 1 of 4

1. In the drawing below, there are five parallel lines and a transversal, which creates 20 different angles. One of the angles is marked with an "x." Another angle is marked with a "y." Locate all angles equal to "x" and label them "x." Label all angles equal to angle "y" with a "y," until all 20 angles are labeled.



2. Circle every obtuse, congruent angle, in the drawing above.

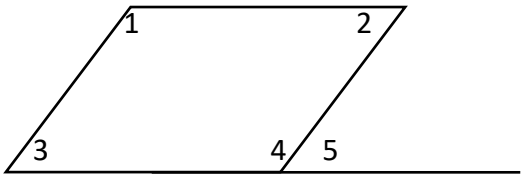
Use the drawing below to answer questions 3 – 5.



3. If $\measuredangle 1 = 70, then \measuredangle 8 =$ _____
4. If $\measuredangle 5 = 82, then \measuredangle 3 =$ _____
5. If $\measuredangle 6 = 120, then \measuredangle 8 =$ _____

Supplemental Worksheet
Volume 7 Lesson 4 page 2 of 4

Use the picture of the parallelogram below to answer questions 6 – 14.



6. If $\angle 1 = 115°,\ then\ \angle 5 =$ _____

7. If $\angle 3 = 60°,\ then\ \angle 2 =$ _____

8. If $\angle 5 = 77°,\ then\ \angle 4 =$ _____

9. If $\angle 4 = 98°, then\ \angle 1 =$ _____

10. Which of the five angles above are acute? _____

11. Name all the angles that are supplementary to angle 2. _____

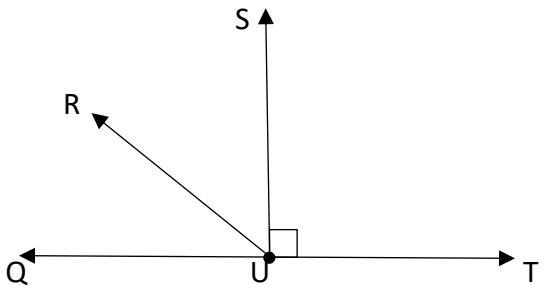
12. Name all the angles that are congruent to angle 3. _____

13. Name all the angles that are congruent to angle 4. _____

14. Is $\angle 5 \cong \angle 2$? _____ Write the theorem to prove your answer is correct.

Supplemental Worksheet
Volume 7 Lesson 4 page 3 of 4

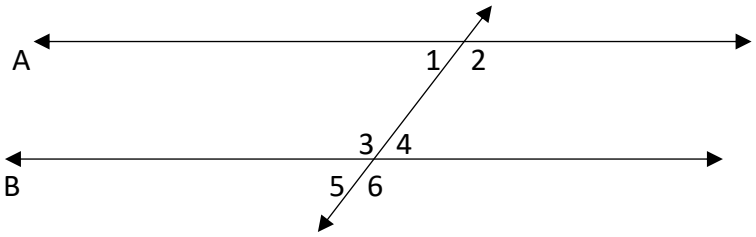
Use the picture below to answer questions 15 – 22.



15. Name an angle that is adjacent to $\angle RUS$ _____
16. $\angle QUR$ is supplementary to $\angle$ _____.
17. $\angle RUS$ is complementary to $\angle$ _____.
18. $\angle SUT$ is congruent to $\angle$ _____.
19. Circle the correct answer. $\angle SUR$ is a(n) $obtuse \quad right \quad acute \quad congruent$ angle.
20. Name every acute angle in the picture above. _____
21. Name every obtuse angle in the picture above. _____
22. Name every right angle in the picture above. _____

Answer questions 23 – 30 with one or more of these words: Supplementary, Complementary, Congruent, Opposite, Interior, Exterior, Corresponding, or Alternate.

Given: $\overline{A} \parallel \overline{B}$



23. $\angle 1 \; and \; \angle 3$ are _____ and _____ angles.
24. $\angle 1 \; and \; \angle 4$ are _____ and _____ angles.
25. $\angle 3 \; and \; \angle 6$ are _____ and _____ angles.
26. $\angle 2 \; and \; \angle 6$ are _____ and _____ angles.
27. $\angle 1 \; and \; \angle 6$ are _____ angles.
28. $\angle 1 \; and \; \angle 5$ are _____ and _____ angles.
29. $\angle 4 \; and \; \angle 6$ are _____ angles.
30. $\angle 3 \; and \; \angle 2$ are _____ and _____ angles.

Supplemental Worksheet
Volume 7 Lesson 4 page 4 of 4

Fill in the blanks to complete the theorem correctly.

31. If two lines are parallel, then their alternate interior angles are _____.

32. If a pair of alternate exterior angles are congruent, then the lines are _____.

33. If two lines are parallel, then interior angles on the same side of the transversal are _____.

34. If two angles are complementary to the same angle, then they are _____.

35. If two lines are parallel, then their corresponding angles are _____.

36. All right angles measure _____.

37. If two angles are supplementary to congruent angles, then they are _____.

38. If two angles are congruent and supplementary, then each is a _____ angle.

39. _____ lines intersect to form four right angles.

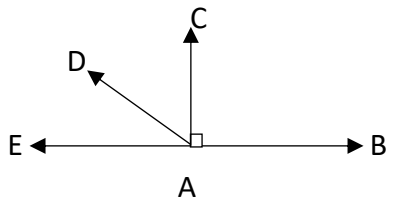
40. If two lines intersect to form congruent adjacent angles, then the lines are _____.

Name _____ Date _____

Supplemental Worksheet
Volume 7 Lesson 5 page 1 of 2

Fill in the blanks with the correct Property of Congruence or Equality that proves the bold equation is true.

1.



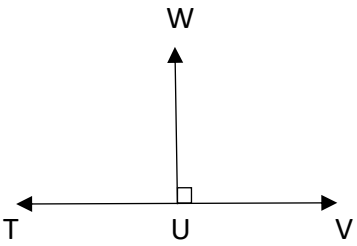
$\angle CAB = 90°$

$\angle DAC + \angle CAB = 125°$

$\boldsymbol{\angle DAC + 90° = 125°}$ _____

$\angle DAC = 35°$

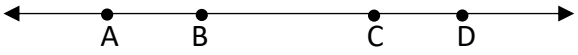
2. $\boldsymbol{\angle TUW \cong \angle WUV}$ _____



3. $Given: AB \cong CD$

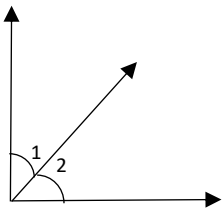
$\boldsymbol{\overline{BC} \cong \overline{BC}}$ _____

$\overline{AC} \cong \overline{BD}$



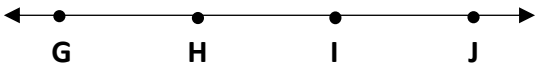
4. $\angle 1 = \angle 2$

$\boldsymbol{\angle 1 \cdot \frac{1}{2} = \angle 2 \cdot \frac{1}{2}}$ _____



5. $\overline{GH} = \overline{IJ}$

$\boldsymbol{\overline{GI} - \overline{GH} = \overline{HJ} - \overline{IJ}}$



_____

Supplemental Worksheet
Volume 7 Lesson 5 page 2 of 2

Use the **Addition Property** to correctly complete the equation below.

6. $\overline{XY} + \overline{WZ} = \overline{WZ} + \_\_\_\_\_$

Use the **Substitution Property** to correctly complete the equations below.

7. $\measuredangle BAC = 34$
$\measuredangle BAC + \measuredangle CAD = 88$
$34 + \_\_\_\_\_ = 88$
$\measuredangle CAD = \_\_\_\_\_$

Use the **Reflexive Property** to correctly complete the equation below.

8. $\angle RS \cong \_\_\_\_\_$

Use the **Symmetric Property** to correctly complete the equation below.

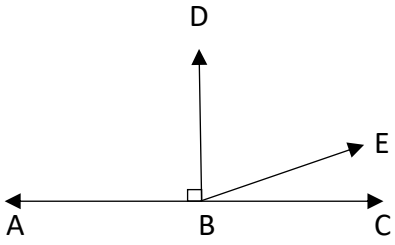
9. $\angle AB = 40°$ $40° = \angle \_\_\_\_\_$

Use the **Transitive Property** to correctly complete the equation below.

10. $\angle K \cong \angle D$ $\angle D \cong \angle J$ $\angle J \cong \angle \_\_\_\_\_$

Use the **Subtraction Property** to correctly complete the equation below.

11. $\angle DBA \cong \angle DBC$
$\angle EBC \cong 23°$
$\angle DBA - \angle \_\_\_\_\_ \cong \angle DBC - \angle EBC$
$90° - \_\_\_° \cong 90° - \_\_\_°$
$\angle DBE \cong \_\_\_\_°$

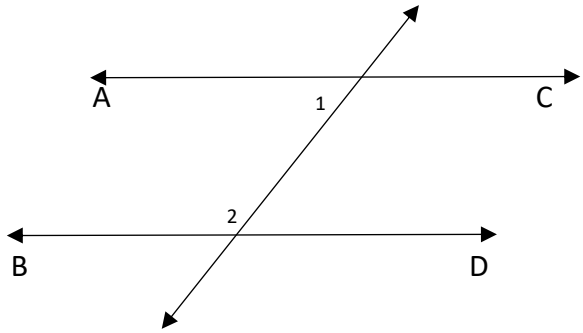


Name _____ Date _____

Supplemental Worksheet
Volume 7 Lesson 6 page 1 of 5

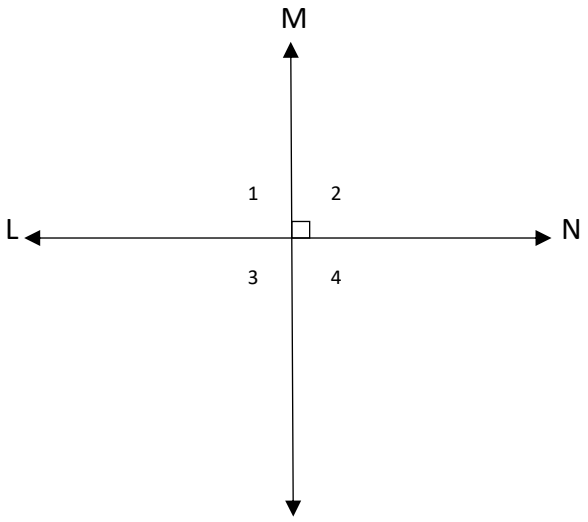
Complete the Formal Proof below.

1. Given: $\measuredangle 1 = 50 \qquad \measuredangle 2 = 130$
   Prove: $AC \parallel BD$



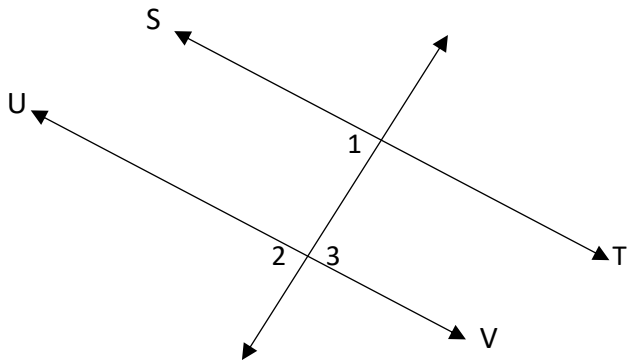
STATEMENT	REASON
1. $\measuredangle 1 = 50 \qquad \measuredangle 2 = 130$	1.
2. $50 + 130 = 180$ $\measuredangle 1 + \measuredangle 2 = 180$	2.
3. $\angle 1 \; and \; \angle 2 \; are \; supplementary.$	3.
4. $AC \parallel BD$	4.

2. Given: $\angle 2 = 90°$
   Prove: $\overline{LN} \perp \overline{MO}$



STATEMENT	REASON
1. $\angle 2 = 90°$	1. Given
2. $\angle 3 = 90°$	2.
3. $\angle 3$ *is supplementary to* $\angle 4$.	3.
4. $\angle 4 + \angle 3 = 180°$	4.
5. $\angle 4 + 90° = 180°$	5.
6. $(\angle 4 + 90°) - 90° = 180° - 90°$ $\angle 4 = 90°$	6.
7. $\angle 1 = 90°$	7.
8. $\overline{LN} \perp \overline{MO}$	8.

3. Given: $ST \parallel UV$
   Prove: $\angle 1 \cong \angle 3$



STATEMENT	REASON
1.	1. Given
2. $\angle 1 \cong \angle 2$	2.
3. $\angle 2 \cong \angle 3$	3.
4. $\angle 1 \cong \angle 3$	4.

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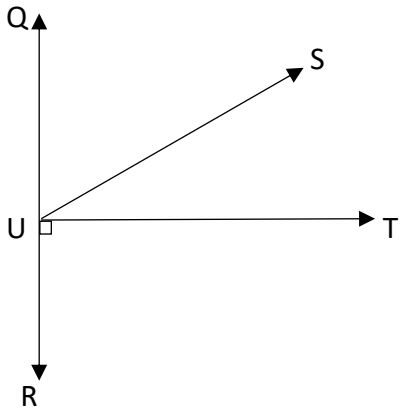
4. Given: $\angle SUT = 30°$
   Prove: $\angle QUS = 60°$



STATEMENT	REASON
1. $\angle RUT = 90°$	1.
2. $\angle RUT \text{ and } \angle QUT \text{ are supplementary.}$	2.
3. $\angle RUT + \angle QUT = 180°$	3.
4. $90° + \angle QUT = 180°$	4.
5. $(90° + \angle QUT) - 90° = 180° - 90°$ $\angle QUT = 90°$	5.
6. $\angle SUT = 30°$	6.
7. $\angle QUS + \angle SUT = QUT$	7.
8. $\angle QUS + 30° = 90°$	8.
9. $(\angle QUS + 30°) - 30° = 90° - 30°$ $\angle QUS = 60°$	9.

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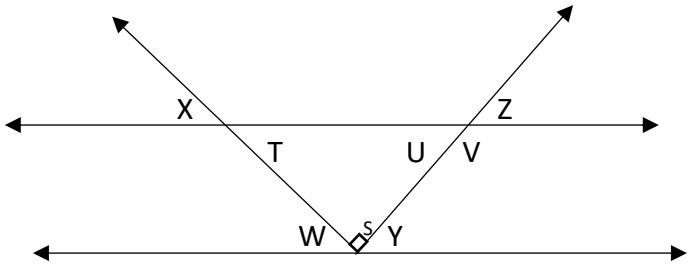
5 . Given: $\angle V = 119°$
Prove: $\angle X = 29°$



STATEMENT	REASON
1. $\angle V = 119°$	1.
2. $\angle U \text{ and } \angle V \text{ are supplementary.}$	2.
3. $\angle U + \angle V = 180°$	3.
4. $\angle U + 119° = 180°$	4.
5. $(\angle U + 119°) - 119° = 180° - 119°$ $\angle U = 61°$	5.
6. $\angle\_\_\_ + \angle\_\_\_ + \angle\_\_\_ = 180°$	6. The sum of a triangle's angles equals $180°$.
7. $\angle S = 90°$	7.
8. $61° + 90° + \angle T = 180°$ $151° + \angle T = 180°$	8.
9. $(151° + \angle T) - 151° = 180° - 151°$ $\angle T = 29°$	9.
10. $\angle T = \angle X$	10.
11. $\angle X = 29°$	11.