Name _____

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Name:_____

Assignments for Geometry
Unit 2 Segments, Lines & Angles

___**1.5: Angle Measure p. 1**

___**1.4: Angle Relationship p. 2**

___**3.6: Perpendicular Bisectors p. 3**

___**1.4: Angle Bisectors p. 4**

___**3.1: Transversal Measurements p. 5**

___**3.1: Parallel Lines with Transversal p. 6**

___**3.2: Interior Angles p. 7**

___**3.2: Exterior Angles p. 8**

___**3.2: Corresponding Angles p. 9**

___**2.6: Alegraic Proofs p. 10**

___**2.7, 2.8: Mini Proofs p. 11**

___**OC 1.7/3.5: Proofs about Parallel and Perpendicular lines p. 12**

 MUST SHOW WORK OR DRAW TABLES

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1.5 Angle Measure Assignment

For Exercises 1–12, use the figure at the right.

Name the vertex of each angle.

1. ∠4   2. ∠1
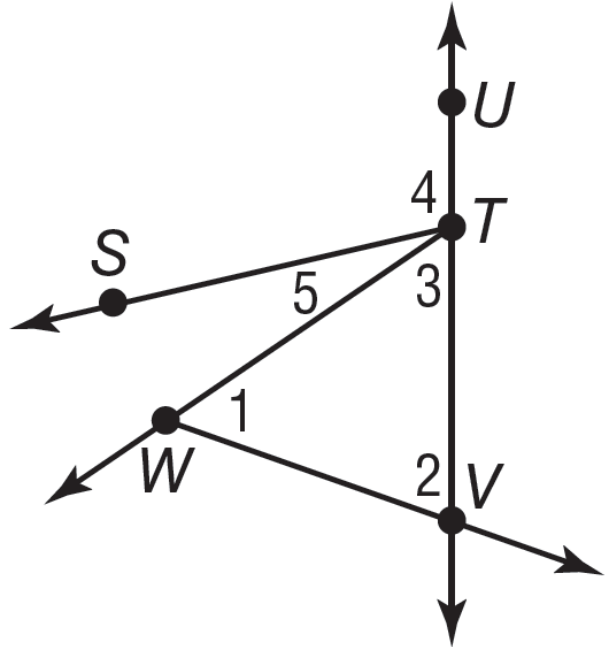
3. ∠2   4. ∠5

Name the sides of each angle.

5. ∠4   6. ∠5

7. ∠STV   8. ∠1

Write another name for each angle.

9. ∠3   10. ∠4

11. ∠WTS   12. ∠2

Classify each angle as *right*, *acute*, or *obtuse*. Then use
a protractor to measure the angle to the nearest degree.
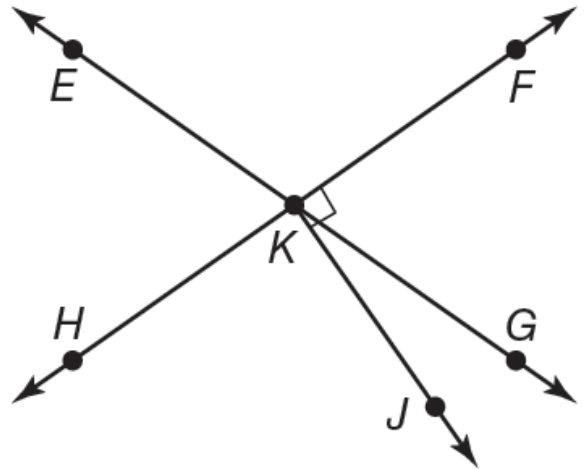
11. ∠UZW   12. ∠YZW

13. ∠TZW   14. ∠UZT

2
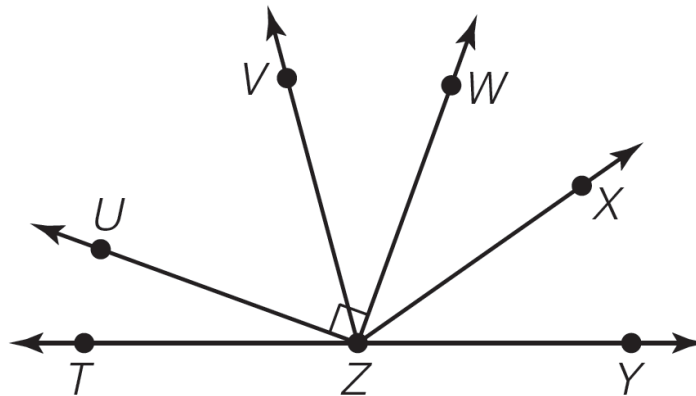
1.4 Angle Relationships Assignment

For Exercises 1–6, use the figure at the right. Name an angle or angle pair that satisfies each condition.

1. Name two acute vertical angles.

2. Name two obtuse vertical angles.

3. Name a linear pair.

4. Name two acute adjacent angles.

5. Name an angle complementary to ∠EKH.

6. Name an angle supplementary to ∠FKG.

7. Find the measures of an angle and its complement if one angle measures 24 degrees more than the other.

8. The measure of the supplement of an angle is 36 less than the measure of the angle. Find the measures of the angles.
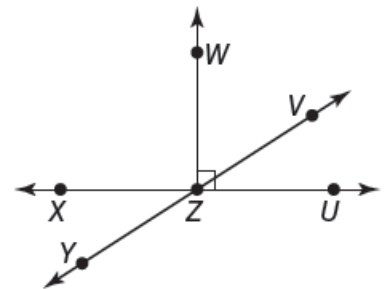
ALGEBRA For Exercises 9–10, use the figure at the right.

9. If $m\angle RTS = 8x + 18$, find the value of x so that $\overrightarrow{TR} \perp \overrightarrow{TS}$.

10. If $m\angle PTQ = 3y - 10$ and $m\angle QTR = y$, find the value of y so that ∠PTR is a right angle.
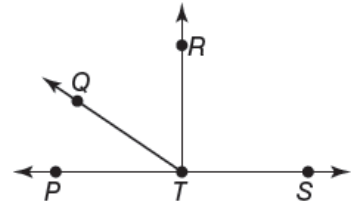
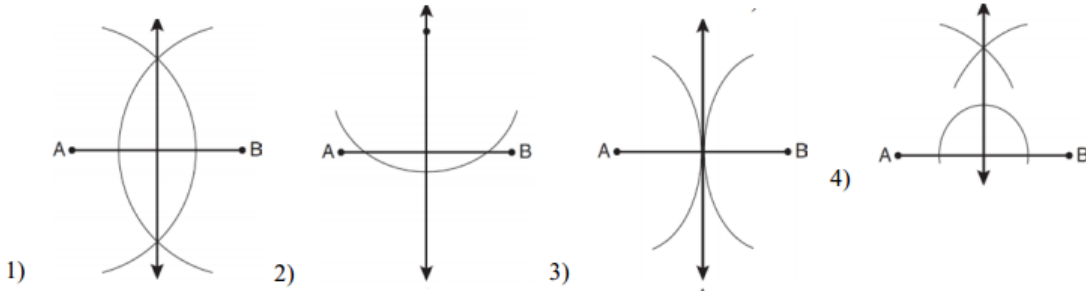**Determine whether each statement can be assumed from the figure. Explain.**

11. ∠WZU is a right angle.

12. ∠YZU and ∠UZV are supplementary.

13. ∠VZU is adjacent to ∠YZX.

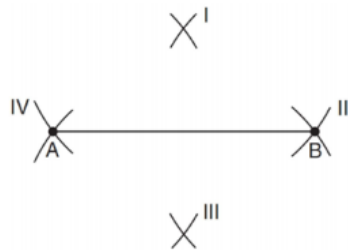## 3.6 Perpendicular Bisector Assignment

Include an explanation for each answer.

1 Which diagram shows the construction of the perpendicular bisector of $\overline{AB}$?

1)   2)   3)   4)

2 Line segment AB is shown in the diagram below.

Which two sets of construction marks, labeled I, II, III, and IV, are part of the construction of the perpendicular bisector of line segment AB?
1)   I and II
2)   I and III
3)   II and III
4)   II and IV

3 One step in a construction uses the endpoints of $\overline{AB}$ to create arcs with the same radii. The arcs intersect above and below the segment. What is the relationship of $\overline{AB}$ and the line connecting the points of intersection of these arcs?
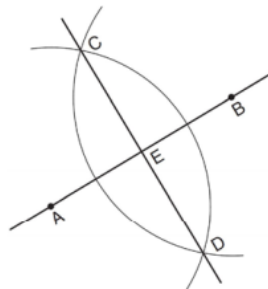1)   collinear
2)   congruent
3)   parallel
4)   perpendicular

4 The diagram below shows the construction of the perpendicular bisector of $\overline{AB}$.
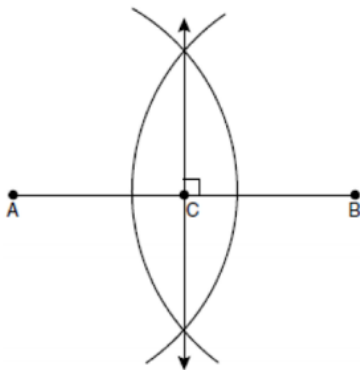
Which statement is *not* true?
1) $AC = CB$
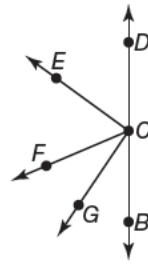2) $CB = \frac{1}{2}AB$
3) $AC = 2AB$
4) $AC + CB = AB$

5 Based on the construction below, which conclusion is *not* always true?

1) $\overline{AB} \perp \overline{CD}$
2) $AB = CD$
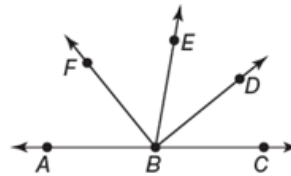3) $AE = EB$
4) $CE = DE$

4

1.4 Angle Bisectors Assignment

ALGEBRA In the figure, $\overleftrightarrow{CB}$ and $\overleftrightarrow{CD}$ are opposite rays, $\overrightarrow{CE}$ bisects $\angle DCF$, and $\overrightarrow{CG}$ bisects $\angle FCB$.

15. If $m\angle DCE = 4x + 15$ and $m\angle ECF = 6x - 5$, find $m\angle DCE$.

16. If $m\angle FCG = 9x + 3$ and $m\angle GCB = 13x - 9$, find $m\angle GCB$.
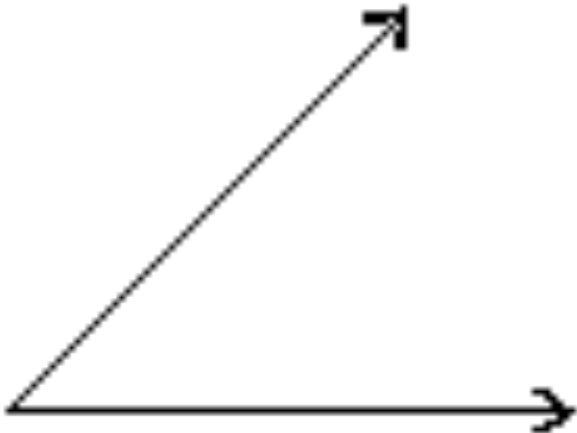
ALGEBRA In the figure, $\overrightarrow{BA}$ and $\overrightarrow{BC}$ are opposite rays, $\overrightarrow{BD}$ bisects $\angle EBC$.

17. If $m\angle EBD = 4x + 16$ and $m\angle DBC = 6x + 4$, find $m\angle EBD$.

18. If $m\angle EBD = 4x - 8$ and $m\angle EBC = 5x + 20$, find the value of x and $m\angle EBC$.

19. Construct the angle bisector.

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3.1 Transversal Measurements Assignment

Use two colors to show the angles that are congruent.

A   B

        1 2   3 4

C ←_____

        5 6   7 8

        9 10   11 12

D ←_____

        13 14   15 16

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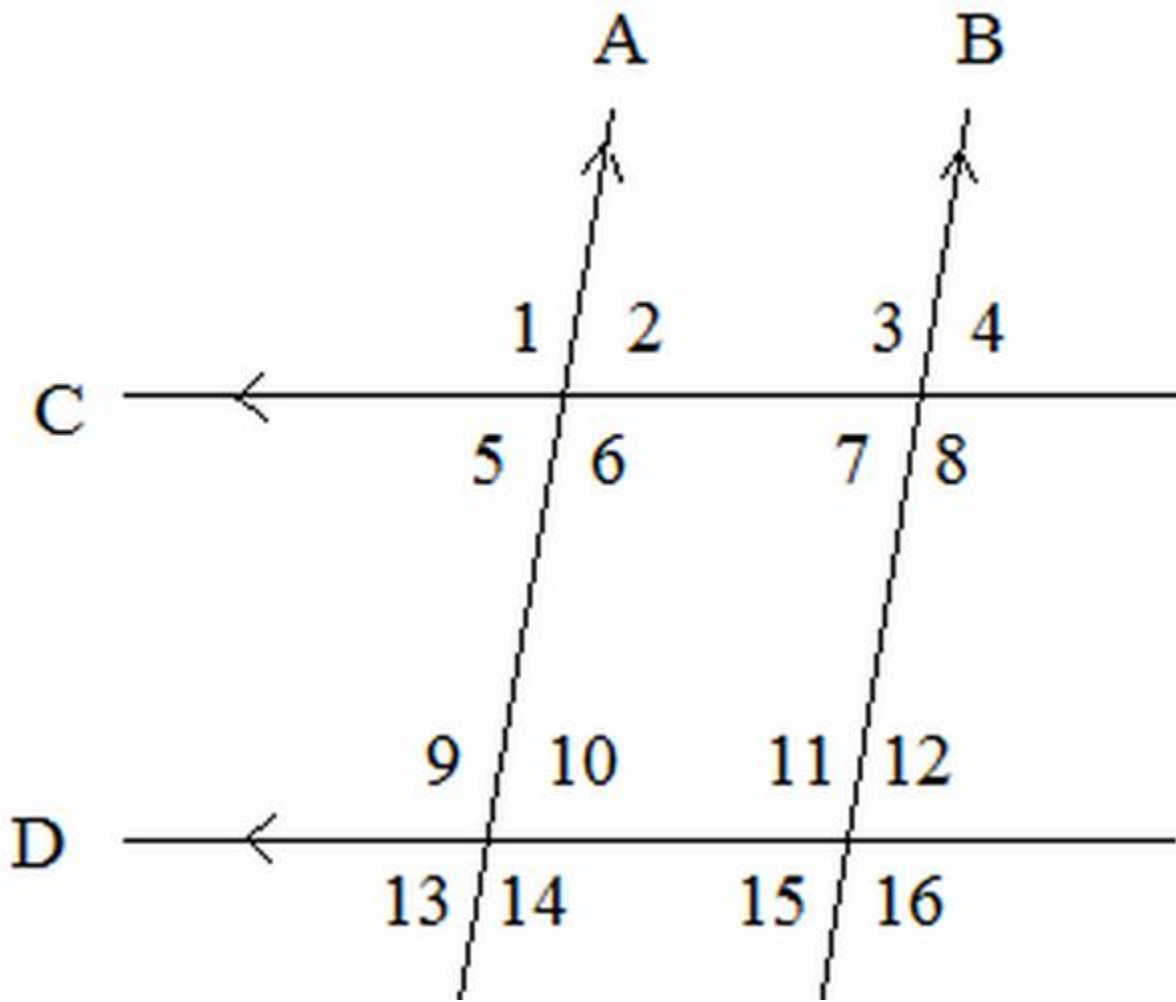
3.1 Parallel Lines with Transversal Assignment

Classify the relationship between each pair of angles as *alternate interior, alternate exterior, corresponding,* or *consecutive interior* angles.

1. $\angle 4$ and $\angle 5$

2. $\angle 5$ and $\angle 11$

3. $\angle 4$ and $\angle 6$

4. $\angle 7$ and $\angle 9$

5. $\angle 2$ and $\angle 8$

6. $\angle 3$ and $\angle 6$

7. $\angle 1$ and $\angle 9$

8. $\angle 3$ and $\angle 9$

9. $\angle 6$ and $\angle 12$

10. $\angle 7$ and $\angle 11$
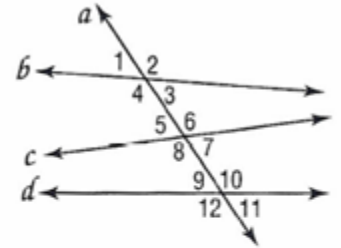
Identify the transversal connecting each pair of angles. Then classify the relationship between each pair of angles.

11. $\angle 4$ and $\angle 10$

12. $\angle 2$ and $\angle 12$

13. $\angle 7$ and $\angle 3$

14. $\angle 13$ and $\angle 10$
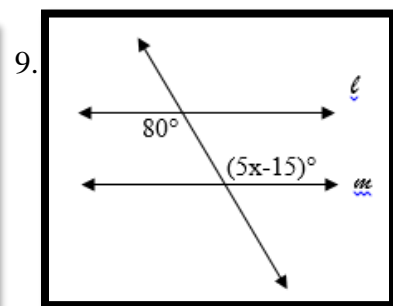
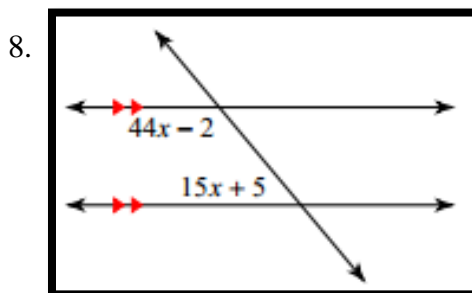**15.** $\angle 8$ and $\angle 14$

16. $\angle 6$ and $\angle 14$

7

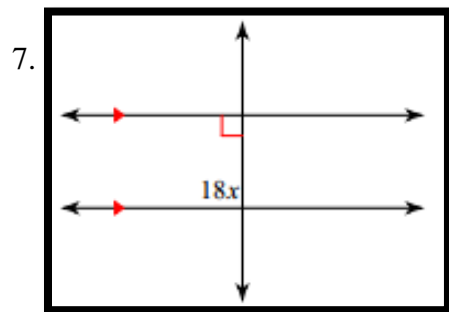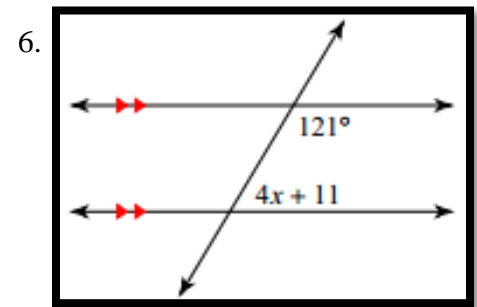Geometry Unit 2 Assignments

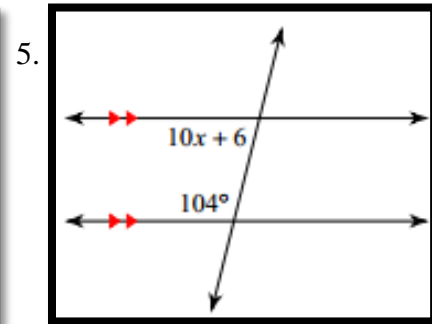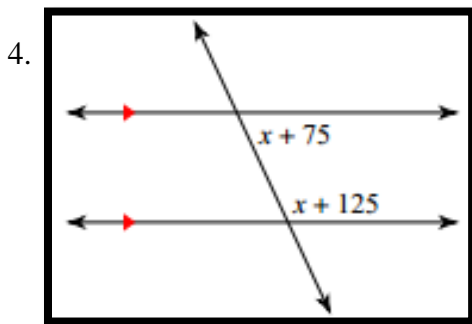Name _____

Period _____ Date _____
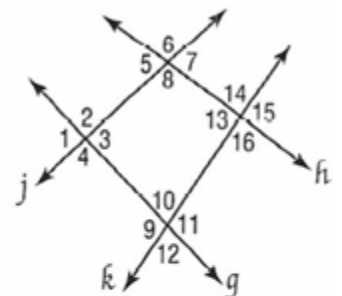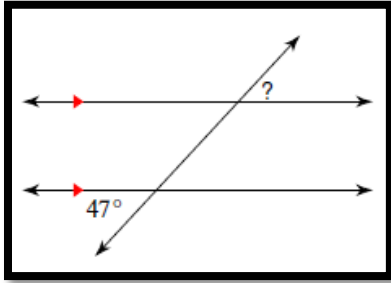
3.2 Interior Angles Assignment

Write the missing interior angles:

1.

2.

3.

For the following solve for x and find the angle measures.
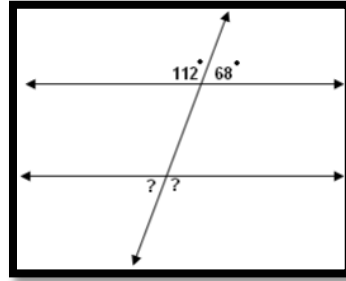
4.

5.

6.

7.

8.

9.
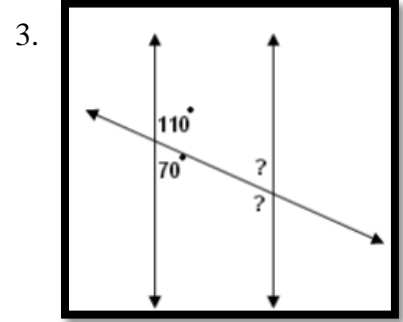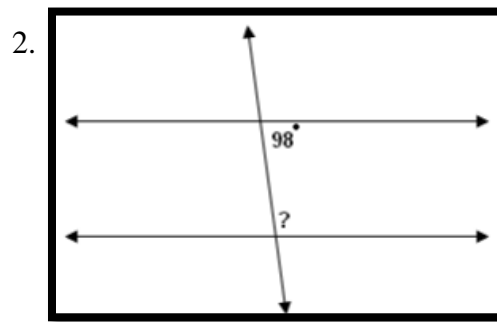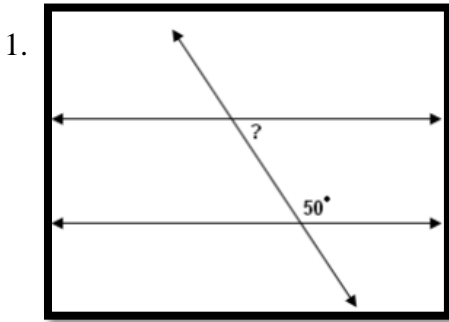
3.2 Exterior Angles Assignment
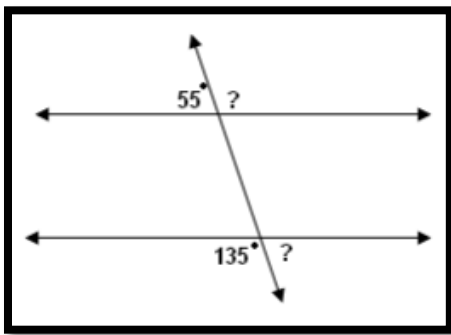
Write the missing interior angles:

1.
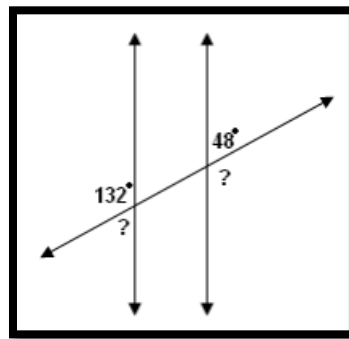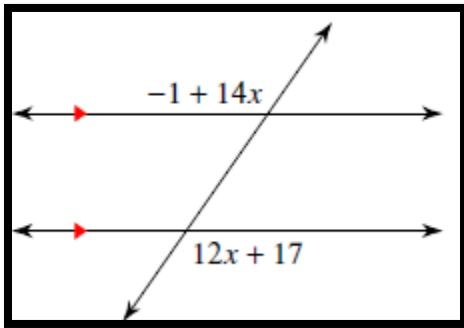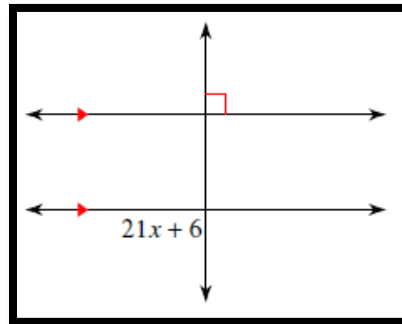

2.

3.

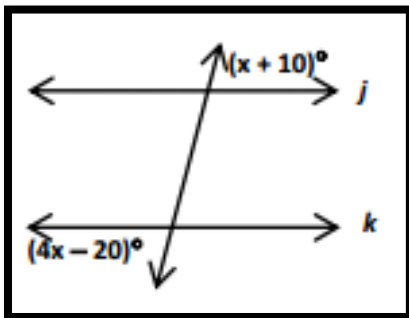4.

For the following solve for x and find the angle measures.

5.

$-1 + 14x$

$12x + 17$

6.

$21x + 6$

7.

$(x + 10)^\circ$

j

$(4x - 20)^\circ$

k

8.

a

57°
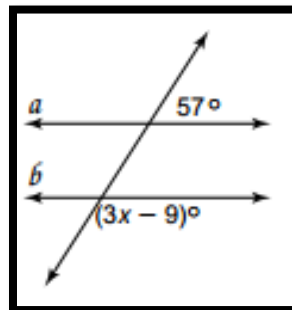
b

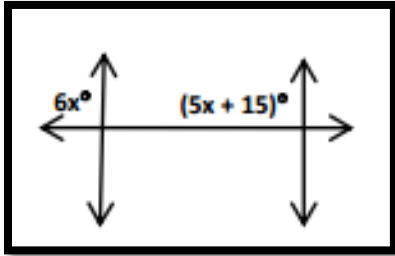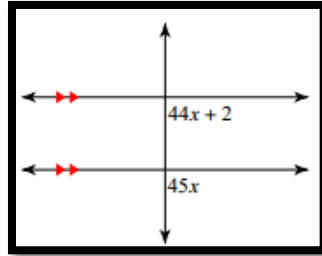$(3x - 9)^\circ$

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3.2 Corresponding Angles Assignments

For the following solve for x and find the angle measures.

1.

$6x°$ $(5x + 15)°$

2.

$44x + 2$

$45x$

3.
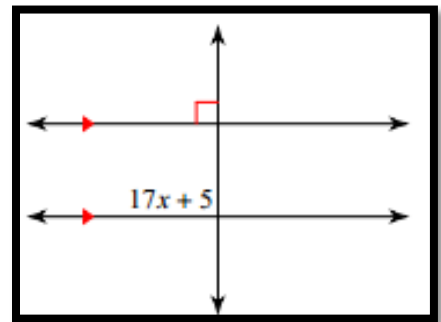
$11x + 1$

$10x + 10$

4.

$115°$

$18x + 7$

5.

$(3x+27)°$ ℓ

$129°$ m

6.

$17x + 5$

7.

$130°$

$x + 139$

8.

$5x + 5$

$4x + 14$

9.

$16x - 2$

$110°$

10.

$22x + 7$

$23x + 3$

10

Geometry Unit 2 Assignments

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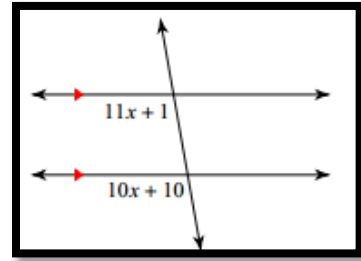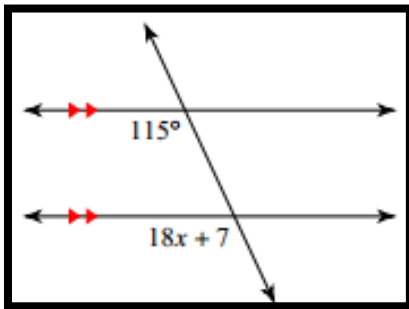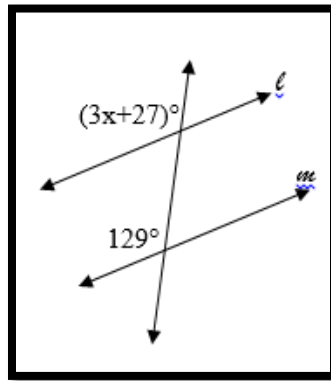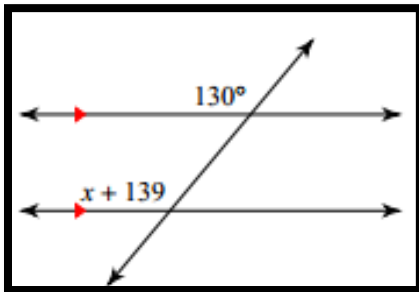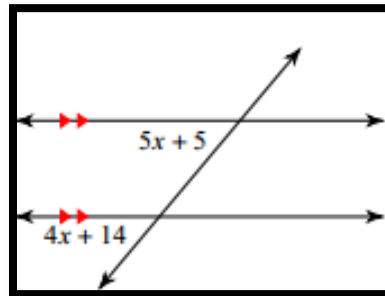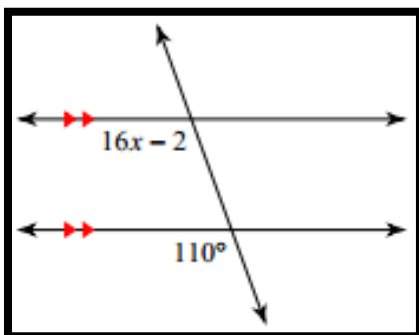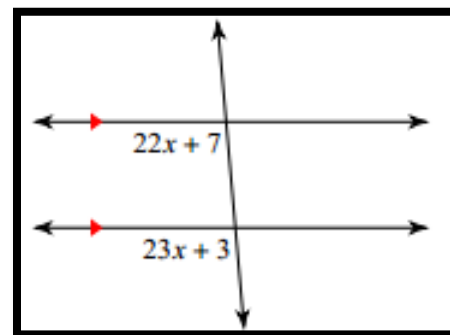
2.6 Algebraic Proofs Assignment

Write a proof for the following algebra problems.

1.

Statements	Reasons
1. $5(2x-1)=9x+2$	1. Given
2. $10x-5=9x+2$	2.
3. $x-5=2$	3.
4. $x=7$	4.

2.

Statements	Reasons
$-2(3x-4)=3x+12$	_____
$-6x+8=3x+12$	_____
$-9x+8=12$	_____
$-9x=4$	_____
$x=-\dfrac{4}{9}$	_____

3.

Statements	Reasons
$55z-3(9z+12)=-64$	Given
$55z-27z-36=-64$	_____
$28z-36=-64$	Simplify
$28z=-28$	_____
$z=-1$	_____

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2.7, 2.8 Mini Proofs Assignment

1.

| $\angle X$ and $\angle Y$ are supplementary | Given |
| $m\angle X + m\angle Y = 180°$ | _____ |

2.

| $\overline{PG} \cong \overline{GD}$ | Given |
| AG bisects $\overline{PD}$ | _____ |

3.

| $\overline{AB} \cong \overline{CD}$ | Given |
| $AB = CD$ | _____ |

4.

| $\angle HGQ$ is a straight angle | Given |
| $m\angle HGQ = 180°$ | _____ |

5.

| $\angle AOB \cong \angle BOC$ | Given |
| OB bisects $\angle AOC$ | _____ |

6.

| $m\angle P = 40°$ | Given |
| $\angle P$ is an acute angle | _____ |

7.

| $\overline{TS} \cong \overline{TS}$ | _____ |
| | _____ |

8.

$m\angle A + m\angle B = 180°$	Given
$m\angle A = 30°$	Given
$30° + m\angle B = 180°$	_____

9.

| $\overline{AB} \cong \overline{CD}$ | Given |
| $AB = CD$ | _____ |

10.

| $m\angle B = 60°$ | Given |
| $m\angle B - 20° = 40°$ | _____ |

11.

| $m\angle PQS = 90°$ | Given |
| $\angle PQS$ is a right angle | _____ |

12.

$\angle C \cong \angle D$	Given
$\angle D \cong \angle E$	Given
$\angle C \cong \angle E$	_____

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OC 1.7/3.5 Proofs about Parallel and Perpendicular Lines Assignment
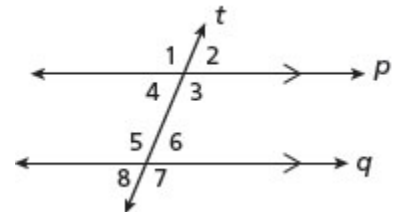   **In Exercises 1-2, complete each proof by writing the missing statements or reasons.**

1. If two parallel lines are cut by a transversal, then the pairs of alternate exterior angles have the same measure.
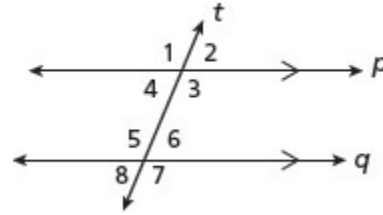
    Given: $p \parallel q$
    Prove: m∠1 = m∠7

Statements	Reasons
1. $p \parallel q$	1.
2. m∠1 = m∠5	2.
3. m∠5 = m∠7	3.
4. m∠1 = m∠7	4.

2. Prove the Converse of the Alternate Interior Angles Theorem.

    Given: m∠3 = m∠5
    Prove: $p \parallel q$

Statements	Reasons
1. m∠3 = m∠5	1.
2. ∠5 and ∠6 are a linear pair.	2. Definition of linear pair
3.	3. Linear Pair Theorem
4. m∠5 + m∠6 = 180°	4.
5. m∠3 + m∠6 = 180°	5.
6. ∠3 and ∠6 are supplementary.	6.
7. $p \parallel q$	7.

13