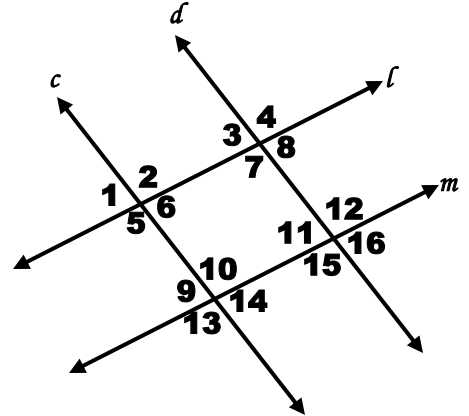NAME_____DATE_____PER_____

SECOND SIX WEEKS REVIEW

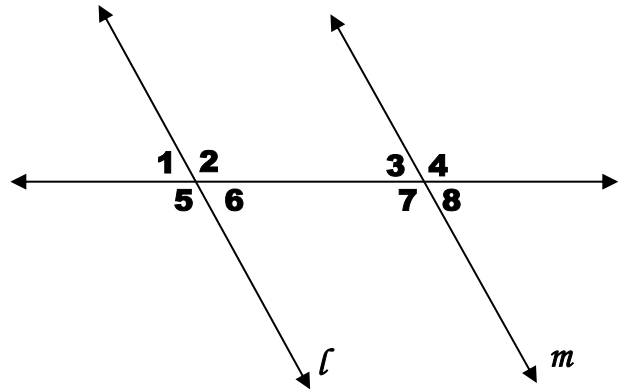**Using the figure below, identify the special angle pair. Then write C for congruent, S for supplementary, or N for neither.**

1. _____; _____	∠1 and ∠8
2. _____; _____	∠6 and ∠14
3. _____; _____	∠10 and ∠11

In the figure below, line ℓ is parallel to line m and m∠1 = 55°. Find the measure of each angle.

4. _____	m∠2 = ?
5. _____	m∠3 = ?
6. _____	m∠4 = ?
7. _____	m∠5 = ?
8. _____	m∠6 = ?
9. _____	m∠7 = ?
10. _____	m∠8 = ?
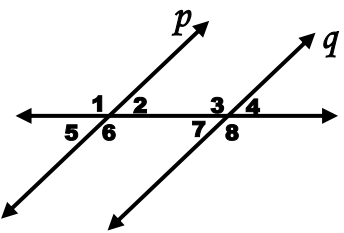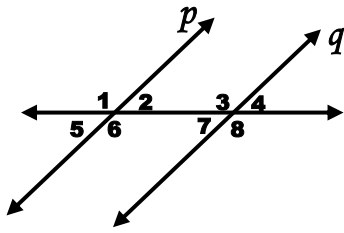
MORE PARALLEL LINES
Find the indicated values.

11. x = _____ y = _____	(6x + 2)° (4x + 10)° y° 64°

Find the m∠1 if $p \parallel q$.

12. m∠1 = _____ 	m∠1 = $(2x)°$ and m∠3 = $(3x - 25)°$
13. m∠1 = _____ 	m∠3 = $(3x+20)°$ and m∠2 = $(5x+8)°$

WRITING EQUATIONS OF PARALLEL & PERPENDICULAR LINES
Determine whether the lines are parallel, perpendicular or neither.

14. _____	$-3x + 2y = 5$, $6x - 4y = 8$
15. _____	$\overline{AB}$ and $\overline{CD}$ A(3, 5) B(4, 7) C(7, 0) D(2, 10)

Use the given information to write the equation of the line in slope-intercept form.

16. _____ How would this problem be different if we changed **_perpendicular_** to **_parallel_**?	A line perpendicular to 3x + 2y = 10 and goes through the point (3, 8).

MATCHING Write the letter of each property next to its definition. The letters _a, b_, and _c_ represent real numbers.

_____ 17. If a = b, then b = a.	**A. Addition Property of Equality**
_____ 18. If a = b, then ac = bc.	**B. Subtraction Property of Equality**
	C. Multiplication Property of Equality
_____ 19. $\overline{AB} \cong \overline{AB}$	**D. Division Property of Equality**
	E. Reflexive Property of Equality
_____ 20. If a, then a = a.	**F. Symmetric Property of Equality**
	G. Transitive Property of Equality
_____ 21. If a = b, then a + c = b + c.	**H. Substitution Property of Equality**
	I. Distributive Property
_____ 22. a(b + c) = ab + ac.	**J. Reflexive Property of Congruence**
	K. Symmetric Property of Congruence
_____ 23. If a = b and b = c, then a = c.	**L. Transitive Property of Congruence**
_____ 24. If $\angle P \cong \angle Q,$ then $\angle Q \cong \angle P.$	
_____ 25. If $\angle A \cong \angle B$ and $\angle B \cong \angle C,$ then $\angle A \cong \angle C$	

_____ 26. If a = b and $c \neq 0$, then $\frac{a}{c} = \frac{b}{c}$

_____ 27. If a = b, then b can be substituted for *a* in any expression

_____ 28. If a = b, then a – c = b – c.

Conditional Statements

29. Write a conditional statement from the sentence **_"Parallel lines do not intersect."_** Underline the hypothesis once and the conclusion twice.

Conditional:_____

_____

Determine if each conditional is true. If false, give a counterexample.

30. If two angles are adjacent, then they have a common ray.   True or False

Counterexample:_____

31. If it is a weekday, then it is Monday.   True or False

Counterexample:_____

Write the converse, inverse, and contrapositive of the given conditional statement in problems 16-18. Find the truth value of each.

32. "If m∠1 = 35°, then ∠1 is acute."

Converse: _____ T or F

Inverse:_____ T or F

Contrapositive:_____ T or F

Use the Word Bank and write the LETTER for the justification for each step.

$$\frac{m}{-5} + 3 = -4.5$$

Statements	Reasons
$\frac{m}{-5} + 3 = -4.5$	33.
$\frac{m}{-5} = -7.5$	34.
$m = 37.5$	35.

$$-47 = 3x - 59$$

Statements	Reasons
$-47 = 3x - 59$	36.
$12 = 3x$	37.
$4 = x$	38.

WORD BANK FOR REVIEW QUESTIONS – **Write the LETTER**
(Letters may be used more than once)

A. Given   B. Simplify

C. Addition Property   D. Subtraction Property

E. Multiplication Property   F. Division Property

G. Substitution Property   H. Distributive Property

I. Angle Addition Postulate

J. Segment Addition Postulate

K. Definition of Midpoint

Write a two-column proof for the following problem.

Given: $\overline{AD}$ **bisects** ∠BAC. **∠1 ≅ ∠3**

Prove: ∠2 ≅ ∠3
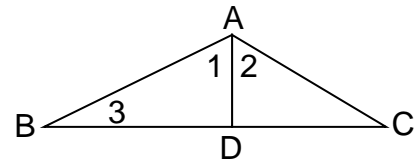
Statements	Reasons
$\overline{AD}$ bisects ∠BAC	39.
∠1 ≅ ∠3	40.
∠1 ≅ ∠2	41.
∠2 ≅ ∠3	42.

WORD BANK FOR REVIEW QUESTIONS – **Write the LETTER**
(Letters may be used more than once)

A. Given

B. Simplify

C. Addition Property

D. Subtraction Property

E. Multiplication Property

F. Division Property

G. Substitution Property

H. Distributive Property

I. Angle Addition Postulate

Triangle Basics
Write the correct term for each description given.

43. _____	A figure formed by the segments determined by 3 non-collinear points.
44. _____	A triangle with no two sides congruent.
45. _____	A triangle with at least two sides congruent.
46. _____	A triangle with all sides congruent.
47. _____	A triangle in which all of the angles are acute.
48. _____	A triangle with an obtuse angle.
49. _____	A triangle with a right angle.

50. _____	A triangle with all angles congruent.

Decide if the following lengths can be sides of a triangle. If yes, classify the triangles by _SIDES_.
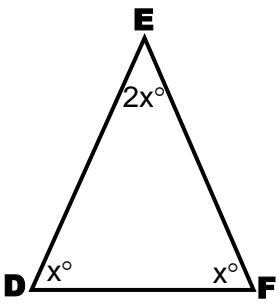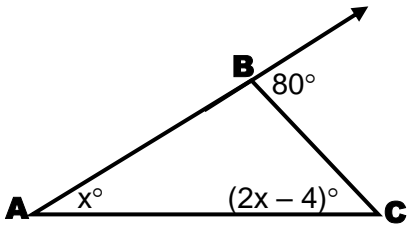
51. YES or NO Classification:_____	8, 10, 20
52. YES or NO Classification:_____	10, 11, 14
53. YES or NO Classification:_____	10, 10, 10

The measures of two angles of a triangle are given. Find the measure of the third angle, then classify the triangle by _ANGLES_.

54. Third Angle = _____ Classification:_____	57°, 33°
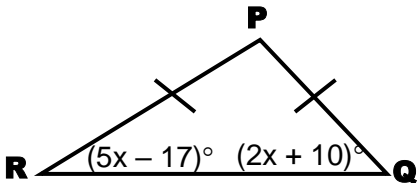
55. Third Angle = _____ Classification:_____	36°, 52°
56. Third Angle = _____ Classification:_____	50°, 50°

Find the specified value(s).

57. x = _____ m∠E = _____	E 2x° D x° x° F
58. x = _____ m∠C = _____ m∠ABC = _____	B 80° A x° (2x − 4)° C

Answer each of the following.
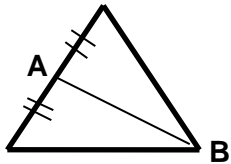
59. Angles:	In △ABC, AB = 6, BC = 8, and AC = 12. List the angles of △ABC in order from largest to smallest.
60. Sides:	In △XYZ, m∠X = 103°, m∠Y = 41°, and m∠Z = 36°. List the sides of △XYZ in order from shortest to longest.
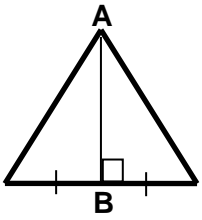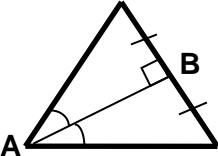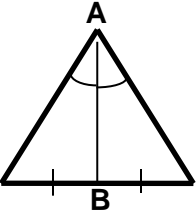
61. m∠P = _____ m∠Q = _____ m∠R = _____	Find the measure of each angle in the picture if m∠R = 5x − 17 and m∠Q = 2x + 10.

Based on the markings below, tell whether $\overline{AB}$ in each triangle is a:

A. Angle Bisector   **B. Median**   **C. Altitude**   **D. Perpendicular Bisector**
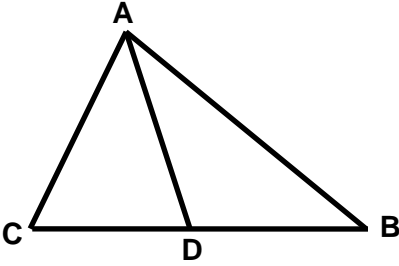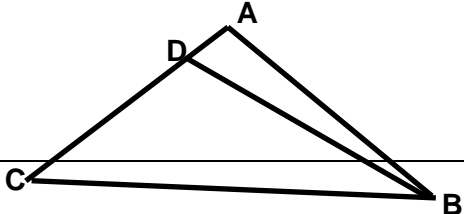
 List all that apply.

62._____	

| 63._____ | |

| 64._____ | |

| 65._____ | |

Special Segments

For each of the following, find the indicated measure.

| 66._____ | $\overline{AD}$ is a median in △ABC, if BD = 5x – 1, CD = 4x + 7, and AC =2x - 3. Find the length of BC. |
| 67._____ | $\overline{BD}$ is an altitude in △ABC, find the value of 'x' if m∠ADB = (4x – 10)°. |

68._____	$\triangle$ABC is an isosceles triangle with vertex angle C and altitude CD. Find m$\angle$2 if m$\angle$1 = (2x + 5)° and m$\angle$2 = (3x − 7)°. C 1 2 5 3 4 6 A B D