
UNIT 1 TEST CHECK LIST
KEY F19

Basics of Geometry

Check	Vocab I need to know	Check	Skills I need to know how to do
	Acute angle Obtuse angle Congruent Complementary angles Supplementary angles Linear pair Vertical angles Perpendicular		<ul style="list-style-type: none"> Set up equations based on a picture (i.e., when to set things equal to each other and when to add them together)

Segment and Angle Relationships

Check	Vocab I need to know	Check	Skills I need to know how to do
	Angle Bisector Segment Bisector Midpoint Perpendicular bisector		<ul style="list-style-type: none"> Angle addition (piece + piece = whole) Segment addition (piece + piece = whole) Set up an equation when something has been bisected (set them equal to each other!)

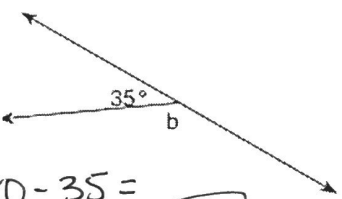
Parallel Line Relationships

Check	Vocab I need to know	Check	Skills I need to know how to do
	Transversal Alternate exterior angles Alternate interior angles Same side exterior angles Same side interior angles Corresponding angles		<ul style="list-style-type: none"> Identify the type of angle from a picture Set up an equation based on the types of angles (i.e., set them equal vs. add them together)

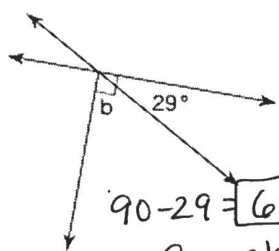
Check	Vocab I need to know	Check	Skills I need to know how to do
	Addition property Subtraction property Multiplication property Division property Distributive property Reflexive property Symmetric property Substitution property Transitive property Definition of \cong segments/angles		<ul style="list-style-type: none"> Use the properties to fill in the missing steps of a proof.

Station 1—Basics of Geometry

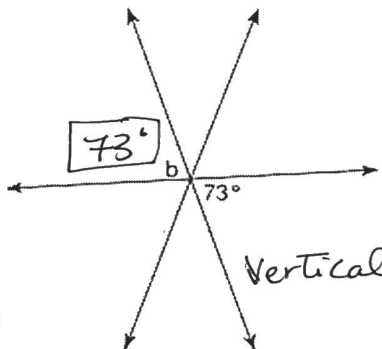
For problems 1-3, name the types of angles (complementary, supplementary, or vertical) and find b .

1. 

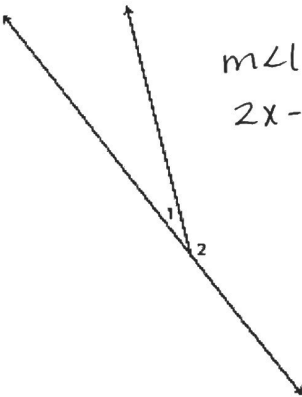
$180 - 35 =$
 $\boxed{145^\circ}$
 linear pair / supplementary

2. 

$90 - 29 = \boxed{61^\circ}$
 Complementary

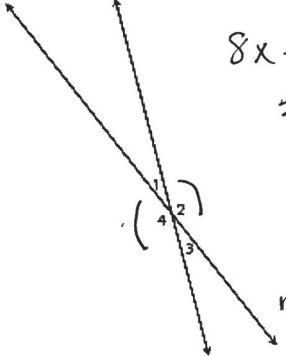
3. 

4. In the diagram below, $\angle 1$ and $\angle 2$ are a linear pair. Find $m\angle 1$ if $m\angle 1 = 2x - 9$ and $m\angle 2 = 10x + 9$.

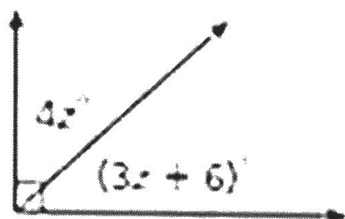


$m\angle 1 + m\angle 2 = 180$
 $2x - 9 + 10x + 9 = 180$
 $12x = 180$
 $\boxed{x = 15}$
 $m\angle 1 = 2(15) - 9$
 $\boxed{m\angle 1 = 21^\circ}$

5. Find $m\angle 4$ in the diagram below if $m\angle 2 = 8x + 6$ and $m\angle 4 = 5x + 21$



$8x + 6 = 5x + 21$
 $3x + 6 = 21$
 $3x = 15$
 $\boxed{x = 5}$
 $m\angle 4 = 5(5) + 21$
 $\boxed{46^\circ}$



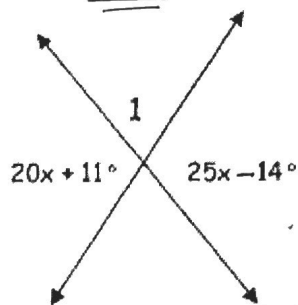
$$4z + 3z + 6 = 90$$

$$7z + 6 = 90$$

$$7z = 84$$

$$\boxed{z = 12}$$

7. Solve for x.



$$20x + 11 = 25x - 14$$

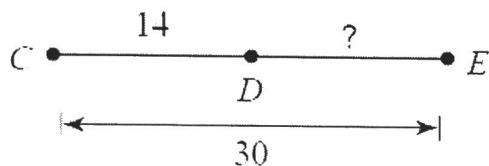
$$11 = 5x - 14$$

$$25 = 5x$$

$$\boxed{5 = x}$$

Station 2—Segment and Angle Relationships

1. Find the missing segment length.



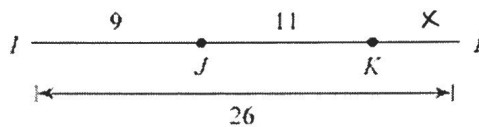
$$CD + DE = CE$$

$$14 + x = 30$$

$$\boxed{x = 16}$$

2.

Find KL



$$IJ + JK + KL = IL$$

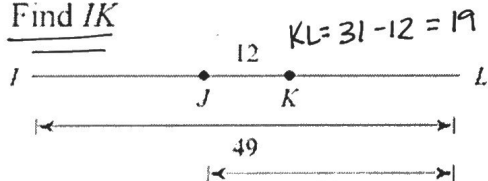
$$9 + 11 + x = 26$$

$$20 + x = 26$$

$$\boxed{x = 6}$$

3.

Find IK



$$IJ + JK + KL = IL$$

$$x + 12 + 19 = 49$$

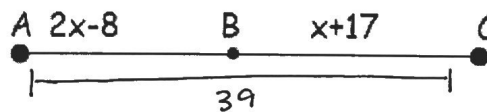
$$x + 31 = 49$$

$$x = 18$$

$$IK = 18 + 12 = \boxed{30}$$

4.

Given: AC = 39 m



$$x = \underline{10}$$

$$AB = 2(10) - 8 = 12$$

$$BC = (10) + 17 = 27$$

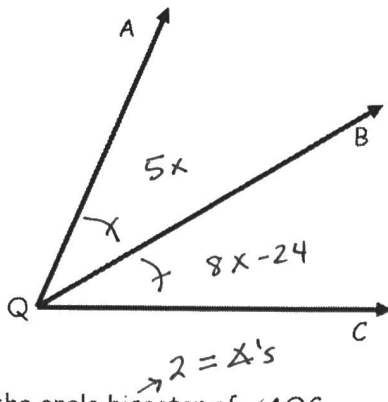
$$AB + BC = AC$$

$$2x - 8 + x + 17 = 39$$

$$3x + 9 = 39$$

$$3x = 30$$

$$x = 10$$



QB is the angle bisector of $\angle AQC$.

$$m\angle AQB = 5x$$

$$m\angle BQC = 8x - 24$$

$$5x = 8x - 24$$

$$-3x = -24$$

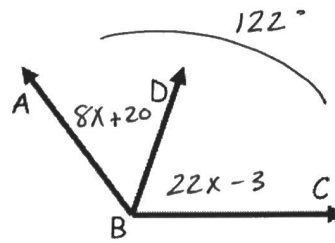
$$x = 8$$

Find the following:

$$x = \underline{8} \quad m\angle AQB = \underline{5(8) = 40^\circ}$$

$$m\angle BQC = \underline{8(8) - 24} \quad m\angle AQC = \underline{40 + 40}$$

6.



$$m\angle ABC = 122$$

$$m\angle ABD = 8x + 20$$

$$m\angle DBC = 22x - 3$$

Find the following:

$$x = \underline{3.5} \quad m\angle ABD = \underline{8(3.5) + 20 = 48^\circ}$$

$$m\angle DBC = \underline{22(3.5) - 3 = 74^\circ}$$

$$8x + 20 + 22x - 3 = 122$$

$$30x + 17 = 122$$

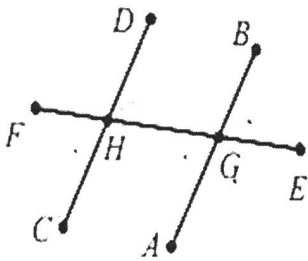
$$30x = 105$$

$$x = 3.5$$

$$\checkmark : 48 + 74 = 122^\circ$$

Station 3—Parallel Line Relationships

For problems 1-5, name the types of angles listed (alt ext, alt int, same side ext, same side int, corresponding)



1. $\angle DHG$ and $\angle HGA$
alt. Interior

2. $\angle FHC$ and $\angle DHG$
vertical

2. $\angle BGE$ and $\angle FHC$
alt. Exterior

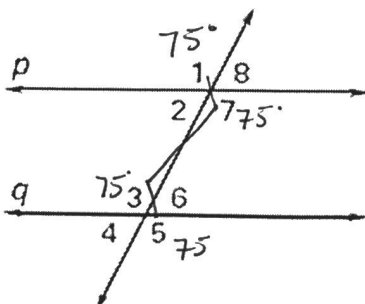
3. $\angle EGA$ and $\angle GHC$
Corresponding

4. $\angle AGH$ and $\angle EGA$
linear pair

5. $\angle DHG$ and $\angle BGH$
same side interior

If $p \parallel q$ and $m\angle 1 = 75^\circ$, find the measures of all the angles formed by the parallel lines cut by the transversal.

$$180 - 75 = 105^\circ$$

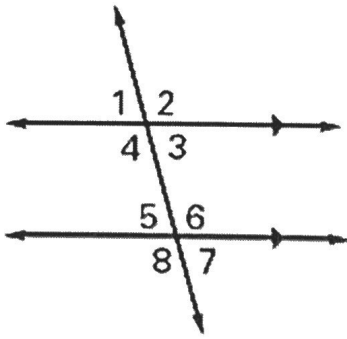


$$m\angle 1 = 75^\circ \quad m\angle 2 = 105^\circ$$

$$m\angle 3 = 75^\circ \quad m\angle 4 = 105^\circ$$

$$m\angle 5 = 75^\circ \quad m\angle 6 = 105^\circ$$

$$m\angle 7 = 75^\circ \quad m\angle 8 = 105^\circ$$



1. If the $m\angle 2 = 113^\circ$, what is the $m\angle 6$? 113°

Corresponding

2. If the $m\angle 4 = 100^\circ$, what is the $m\angle 6$? 100°

Alternate Interior

4. If the $m\angle 7 = 75^\circ$, what is the $m\angle 1$? 75°

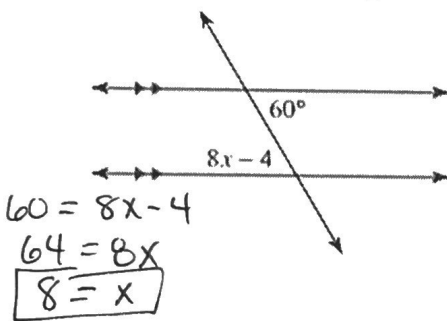
alternate Ext.

5. If the $m\angle 3 = 81^\circ$, what is the $m\angle 4$? 99°

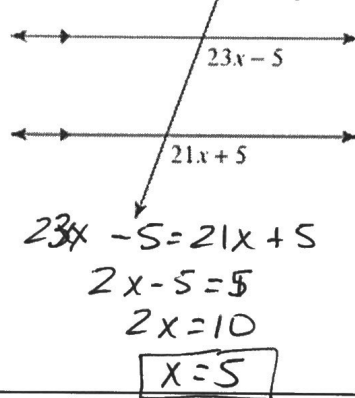
linear pair

Name the angle relationship and then solve for x:

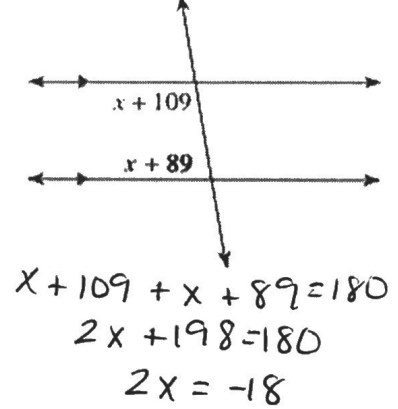
alt. interior



Corresponding



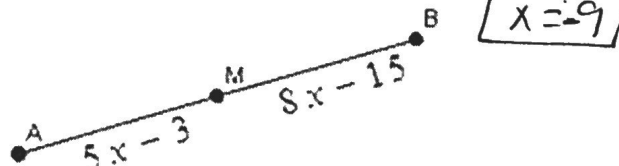
same side interior



Station 4—Algebraic Proofs

1. Given: M is the midpoint of segment AB.

Prove: $x = 4$



Statements	Reasons
1. M is the midpoint of segment AB.	
2. $\overline{AM} \cong \overline{MB}$	Definition of a midpoint
3. $AM = MB$	Definition of congruent angles
4. $5x - 3 = 8x - 15$	Substitution
5. $-3 = 3x - 15$	Subtraction Property
6. $12 = 3x$	Addition Property
7. $4 = x$	Division Property
8. $x = 4$	Symmetric

Match the property to each statement (PROPERTIES CAN BE USED MORE THAN ONCE).

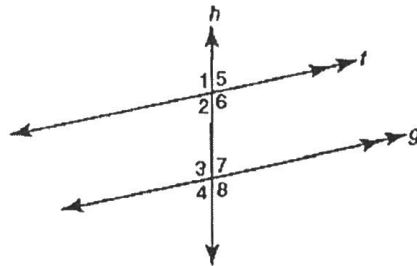
1. D If $CD = 15$ and $LM = 15$, then $CD = LM$.
2. C If $AB = 3x - 2$ and $x = 2$, then $AB = 4$.
3. B $16 = 16$
4. D $\angle A = 62^\circ$ and $\angle B = 62^\circ$, so $\angle A = \angle B$.
5. C $AB = 2x + 2$ and $DE = 4x - 1$. $AB = DE$ so $2x + 2 = 4x - 1$.
6. A $2x + 1 = 6$ and $6 = 2x + 1$.

- A. Symmetric Property
- B. Reflexive Property
- C. Substitution Property
- D. Transitive Property

2. Complete the proof.

Given: $f \parallel g$, h is a transversal

Prove: $\angle 1$ and $\angle 4$ are supplementary



Statements	Reasons
1. $f \parallel g$	1. Given
2. $\angle 1$ and $\angle 2$ are linear Pairs	2. Definition of Linear Pairs
3. $\angle 3$ and $\angle 4$ are linear pairs	3. Def. of Linear Pair
4. $m\angle 1 + m\angle 2 = 180$	4. Linear pairs are supplementary/Def. of Sup. \sphericalangle
5. $m\angle 3 + m\angle 4 = 180$	5. Def. of Supp \sphericalangle 's
6. $\angle 1 \cong \angle 3$	6. Corresponding Angle Postulate
7. $m\angle 1 = m\angle 3$	7. Definition of Congruent Angles
8. $m\angle 1 + m\angle 4 = 180$	8. Substitution
9. $\angle 1$ and $\angle 4$ are Supplementary	9. Definition of Supplementary Angles