Name: _____

Geometry Honors Summer Packet

This packet covers the first half of Chapter 1: Geometry Basics from the book we will be using as a resource for all Geometry Courses (*Everything You Need to Ace Geometry in One Big Fat Notebook*). **Completing this packet is a requirement for the Geometry Honors Course.**

Topics Covered:

- Points, Lines, & Planes
- Segment Addition Postulate
- Angles & Angle Addition Postulate
- Angle Pairs & Angle Relationships

HEADS UP: On the first two days of school we will review the material in a series of activities. On the third day of class there will be a graded quiz based on this material. This will be one of the first items in the gradebook for this course.

Below I have provided some links to help you with this packet. This packet is adapted from the work by Gina Wilson. You will notice that the first video does not exactly correlate with everything in this packet. Anything that seems to be missing can be found in the *Everything You Need to Ace Geometry in One Big Fat Notebook*. The following sections (1.1.B, 1.2, and 1.3) go along with the video better, the formatting of the pages is just slightly different.

Topics Covered	Helpful Video Links
1.1.A Points, Lines, and Planes	https://youtu.be/zPq8Taa_yp8
1.1.B Segment Addition Postulate	https://youtu.be/8UpYwkNswPs
1.2 Angles & Angle Addition Postulate	https://youtu.be/VNB0WkmK2To
1.3 Angle Pairs & Angle Relationships	https://youtu.be/pqJjX2k8kAs

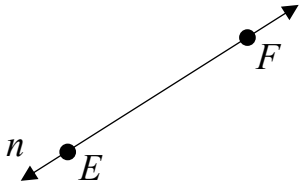
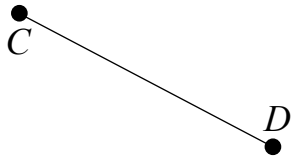
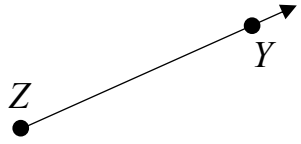
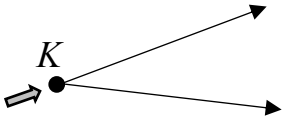
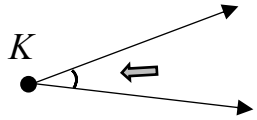
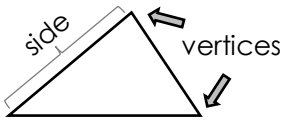
I have provided the page numbers in the *Everything You Need to Ace Geometry in One Big Fat Notebook* that go with each section at the top of each section. The picture to the right is an example of how the page numbers are being provided. For example, this picture say 2 – 7 which means that the information for this section can be found in pages 2 through 7 in the *Everything You Need to Ace Geometry in One Big Fat Notebook*

I look forward to meeting you soon and I hope you all have a wonderful summer! See you in August! – Mrs. Ohrt

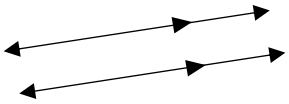
1.1.A Points, Lines, & Planes

2 – 7

Lesson Objective: I can use definitions of basic geometry terms to properly name figures in a given diagram.

Point •A	– A point is a _____. – It has no _____ or _____ . – Always use a single CAPITAL LETTER to name a point. **Example:** _____
Line 	– A line is made up of _____ . – Any _____ points form a line. – A line has not _____ or _____ . – Name a line by any two points anywhere on the line with ↔ over the top of them, or a lowercase script letter that might be next to the line. **Example:** _____
Line Segment 	– A line segment is made up of _____ . – The difference between a line and a line segment is that a line segment stops, it does not continue. – Name a line segment using the two endpoints with – over the top of them. **Example:** _____
Ray 	– A ray starts at a point and extends _____ (forever) in one direction. – Name a ray by using the endpoint and another point on the line with a → over the top of them. The order DOES matter! **Example:** _____
Vertex 	– A vertex is the point of _____ between two or more segments, rays, or lines. **Example:** _____ – When referring to more than one vertex it is vertices (**vur**-t*uh*-seez)
Angle 	– An angle is formed by _____ with the same endpoint (this endpoint is referred to as the vertex of the angle) **Example:** _____
Triangle 	– A triangle is a shape with ____ sides and ____ vertices *** We will learn more about triangles in Unit 3*

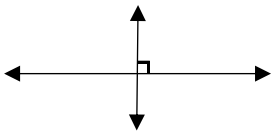
Parallel Lines



- Parallel lines are lines that are always _____ (the same distance apart). They never intersect.

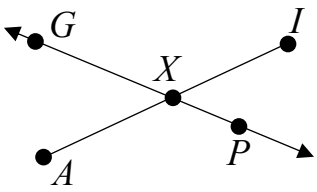
  *** We will learn more about parallel lines in Unit 2*

Perpendicular Lines



- Perpendicular lines are lines that intersect to form _____ right angles (90° angles).

Collinear

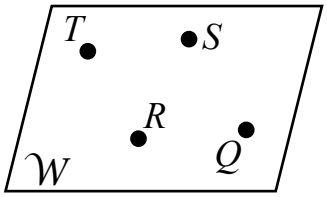


- Points that are on the _____

  Example: _____
- NON-Collinear: points that do NOT lie of the same line (<u>MUST list at least three points with at least one point not on the same line!)</u>

  Example: _____

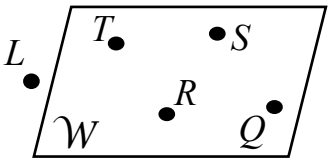
Plane



- A plane is a _____ made up of points.
- Any _____ points make up a plane.
- A plane extends indefinitely (forever) in all directions.
- Name a plane by any three non-collinear points on the plane or an uppercase script letter that might be near the edge of the plane.

  Example: _____

Coplanar

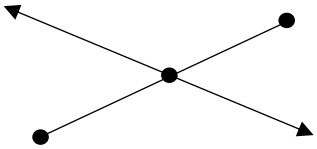


- Points that are on the _____

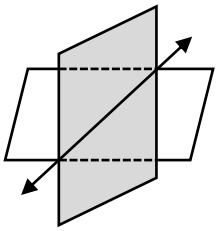
  Example: _____
- NON-Coplanar: points that do NOT like on the same plane (<u>MUST list at least four points with at least one not on the same plane</u>!)

  Example: _____

Intersecting Lines & Planes



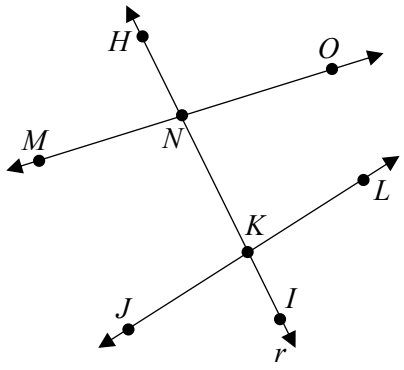
Two lines intersect at a _____



Two planes intersect at a _____

Naming Points, Lines, & Planes Practice!

1. Use the diagram to the right to name the following.



a) Four collinear points. _____

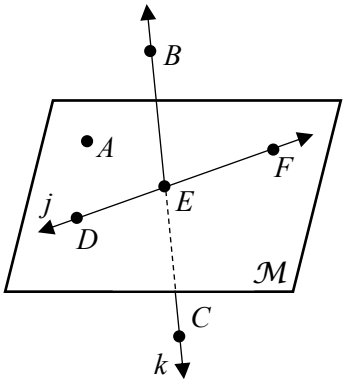
b) A line that contains point M. _____

c) A line that contains points H and K. _____

d) Another name for line q. _____

e) The intersection of lines p and r. _____

2. Use the diagram to the right to name the following.



a) A line containing point F. _____

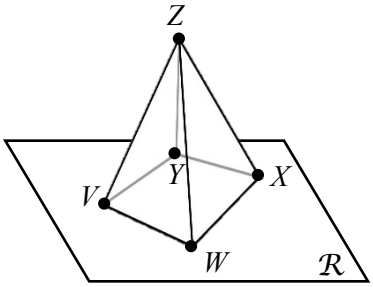
b) Another name for line k. _____

c) A plane containing point A. _____

d) An example of three non-collinear points. _____

e) The intersection of plane M and line K. _____

3. Use the diagram to the right to name the following.



a) Three coplanar points. _____

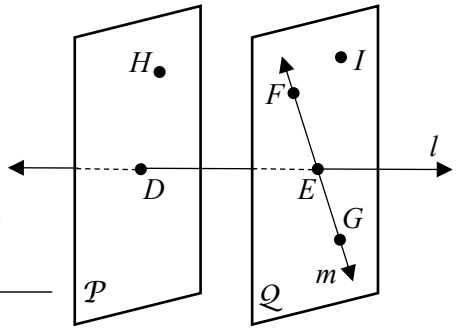
b) A plane containing point X. _____

c) The intersection of plane R and plane ZVY. _____

d) How many planes appear in the figure? _____

e) How many planes contain point W? _____

4. Use the diagram to the right to name the following.



a) The intersection of lines l and m. _____

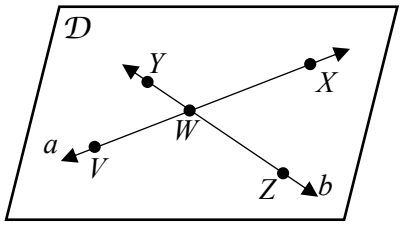
b) Another name for plane Q. _____

c) Aare points D and E collinear or coplanar? _____

d) How many times do planes P and Q intersect? _____

Homework 1.1.A : Points, Lines, & Planes

1. Use the diagram to the right to name the following.



a) How many points appear in the figure? _____

b) How many lines appear in the figure? _____

c) How many planes appear in the figure? _____

d) Name a line containing point V. _____

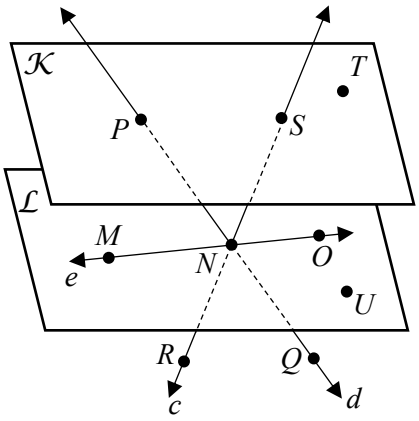
e) Name the intersection of lines a and b. _____

f) Give another name for line b. _____

g) Name three non-collinear points. _____

h) Give another name for plane $\mathcal{D}$. _____

2. Use the diagram to the right to name the following.



a) How many points appear in the figure? _____

b) How many lines appear in the figure? _____

c) How many planes appear in the figure? _____

d) Name three collinear points. _____

e) Name four non-coplanar points. _____

f) Give another name for line e. _____

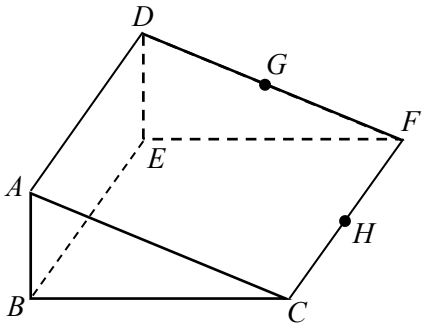
g) Name the intersection of $\overleftrightarrow{PQ}$ and $\overleftrightarrow{MO}$. _____

h) Name the intersection of plane $\mathcal{K}$ and line c. _____

i) Give another name for plane $\mathcal{L}$. _____

j) Give another name for $\overleftrightarrow{PQ}$. _____

3. Use the diagram to the right to name the following.



a) How many points appear in the figure? _____

b) How many lines appear in the figure? _____

c) How many planes appear in the figure? _____

d) Name three collinear points. _____

e) Name four coplanar points. _____

f) Name the intersection of planes ABC and ABE. _____

g) Name the intersection of planes BCH and DEF. _____

h) Name the intersection of $\overline{AD}$ and $\overline{DF}$. _____

8 – 13

1.1.B SEGMENT ADDITION POSTULATE

LESSON OBJECTIVE: I can use the segment addition postulate to find the measure of indicated lengths.

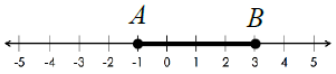
MEASURING SEGMENTS

The distance between two points A and B can be written as _____

or _____.

BAR ⇨ $\overline{AB}$ name of the line segment

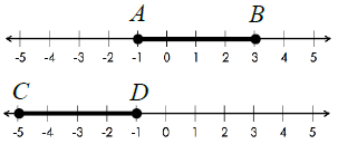
NO BAR ⇨ AB length of the line segment



AB = _____

CONGRUENT SEGMENTS

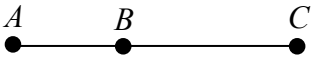
If _____, then the segments are congruent. This is written as _____.



SEGMENT ADDITION POSTULATE

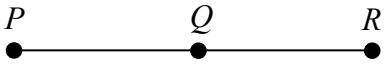
If A, B, and C, are collinear points and B is between A and C, then:

_____



Examples

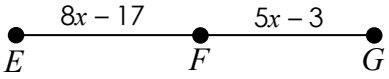
Use the diagram below for questions 1 and 2



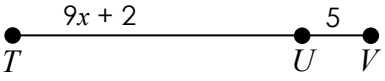
1. If $PQ = 9$ and $QR = 28$, find PR.

2. If $QR = 17$ and $PR = 21$, find PQ.

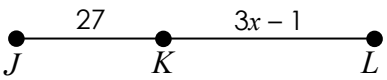
3. If $EG = 71$, find the value of x.



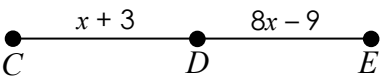
4. If $TV = 14x - 8$, find TU.



5. If $JL = 5x + 2$, find JL.



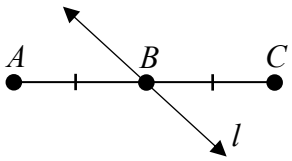
6. If $CE = 7x + 4$, find the value of x.



7. If $SK = 13x - 5$, $KY = 2x + 9$, and $SY = 36 - x$, find each value.

$x =$ _____
$SK =$ _____
$KY =$ _____
$SY =$ _____

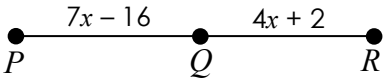
Midpoint of a Segment



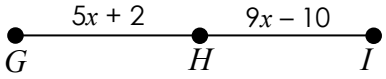
- The _____ of a segment is a point that divides the segment into _____.
- A line, ray, or segment that intersects a segment at its midpoint is said to _____ the segment and is called the _____.
- In the diagram to the left, _____ is the midpoint of _____ and line _____ is a _____ of _____.

Examples

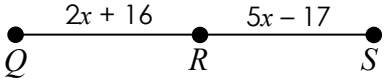
8. If Q is the midpoint of $\overline{PR}$, find the value of x.



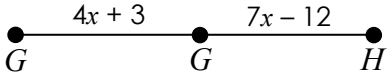
9. If H is the midpoint of $\overline{GI}$, find GH.



10. If R is the midpoint of $\overline{QS}$, find QS.

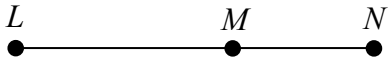


11. If G is the midpoint of $\overline{FH}$ and $FH = 6y - 2$, find y.



Homework 1.1.B : Segment Addition Postulate

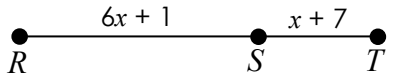
Use the diagram below for questions 1 and 2



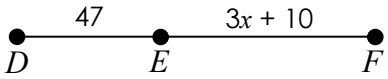
1. If $LM = 22$ and $MN = 15$, find LN.

2. If $LN = 54$ and $LM = 31$, find MN.

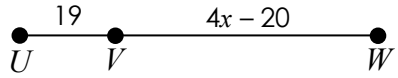
3. If $RT = 36$, find the value of x.



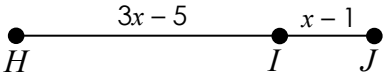
4. If $DF = 9x - 39$, find EF.



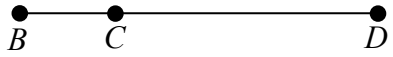
5. If $UW = 6x - 35$, find UW.



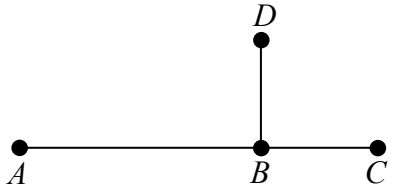
6. If $HJ = 7x - 27$, find the value of x.



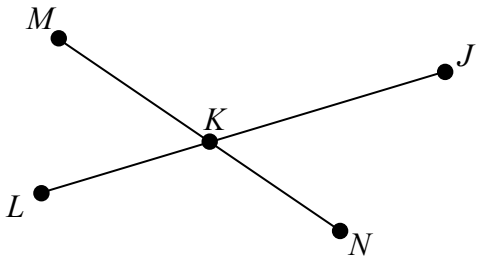
7. If $BD = 7x - 10$, $BC = 4x - 29$, and $CD = 5x - 9$, find each value.



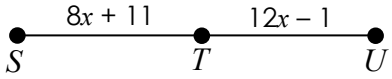
8. If $\overline{BD} \cong \overline{BC}$, $BD = 5x - 26$, $BC = 2x + 1$, and $AC = 43$, find AB.



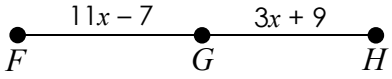
9. If $\overline{LK} \cong \overline{MK}$, $LK = 7x - 10$, $KN = x + 3$, $MN = 9x - 11$, and $KJ = 28$, find LJ.



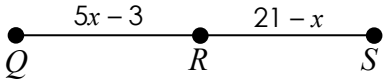
10. If T is the midpoint of $\overline{SU}$, find the value of x.



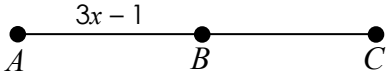
11. If G is the midpoint of $\overline{FH}$, find FG.



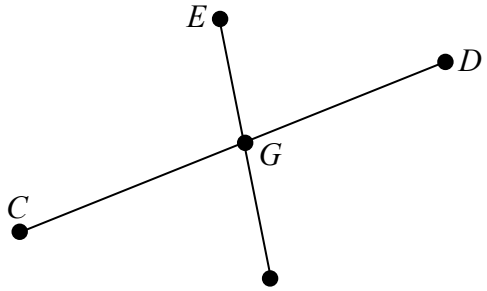
12. If R is the midpoint of $\overline{QS}$, find QS.



13. If B is the midpoint of $\overline{AC}$, and $AC = 8x - 20$ find BC.



14. If $\overline{EF}$ bisects $\overline{CD}$, $CG = 5x - 1$, $GD = 7x - 13$, $EF = 6x - 4$, and $GF = 13$, find EG.



15. If R is the midpoint of $\overline{QS}$, $RS = 2x - 4$, $ST = 4x - 1$, and $RT = 8x - 43$, find QS.

1.2 Angles & Angle Addition Postulate

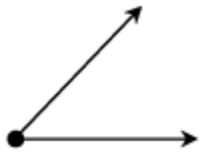
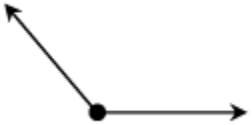
17 – 23 & 33 – 35

Lesson Objective: I can classify, and name angles based on their degree measure. I can also find an indicated angle using the angle addition postulate.

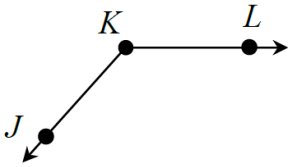
Angles

- An angle is formed by two _____ with a common endpoint.
- This common endpoint is called the _____.
- The rays are called the _____.
- Name an angle using _____ letters. The middle letter must always be the vertex of the angle!
- Using a single letter if there is ONLY ONE angle located at the vertex.
  *Most of the time you are labeling angles you will be using 3 letters.
- When referring to the measure of an angle, use a lowercase m.
  Example: $m\angle ABC = 60^\circ$

Types of Angles

Example #1



a) Nam the vertex of the angle. _____

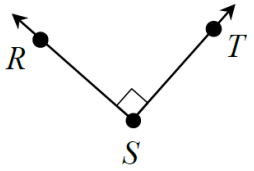
b) Name the sides of the angle. _____

c) Give three ways to name the angle.

_____ , _____ , _____

d) Classify the angle. _____

Example #2



1. Nam the vertex of the angle. _____

2. Name the sides of the angle. _____

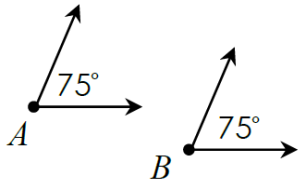
3. Give three ways to name the angle.

_____ , _____ , _____

4. Classify the angle. _____

Congruent Angles

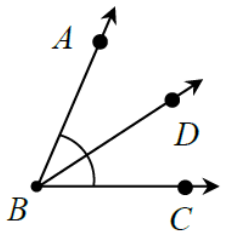
If _____, then the angles are congruent. This is written as _____



Angle Bisector

A _____ that divides an angle into _____ _____.

In the diagram to the right, _____ is an angle bisector, therefore, _____.

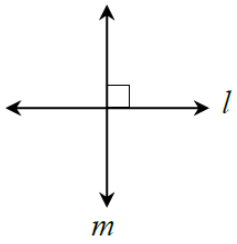


Perpendicular Lines

Two lines that _____ at a _____.

The symbol for perpendicular is _____.

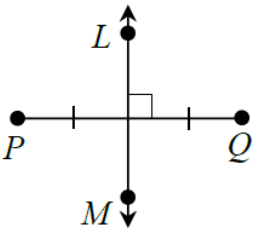
In the diagram to the right, _____.



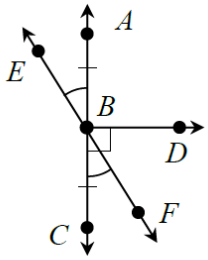
Perpendicular Bisector

A line, segment, or ray _____ to a segment at its _____.

In the diagram to the right, _____ is the perpendicular bisector to _____.



Example #3



a) Write another name for $\angle CBF$. _____

b) Name the sides of $\angle EBD$. _____

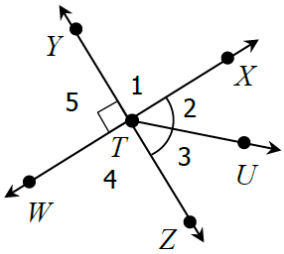
c) Classify $\angle ABC$. _____

d) Give an example of an obtuse angle. _____

e) Name two congruent angles. _____

f) Name a perpendicular bisector. _____

Example #4



a) Name the vertex of $\angle 2$. _____

b) Name the sides of $\angle 4$. _____

c) Write another name for $\angle 3$. _____

d) Write another name for $\angle 1$. _____

e) Classify $\angle YTW$. _____

f) Classify $\angle YTU$. _____

g) Classify $\angle XTU$. _____

h) Classify $\angle WTX$. _____

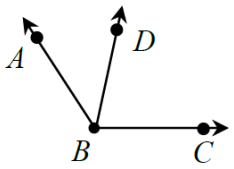
i) Name two perpendicular lines. _____

g) Name an angle bisector. _____

Angle Addition Postulate

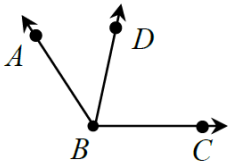
If D is the interior of $\angle ABC$, then

_____



Examples

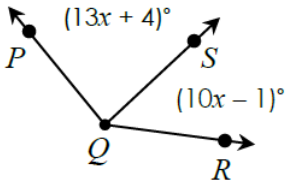
Use the diagram below to answer questions 1 and 2.



1. If $m\angle ABD = 48°$ and $m\angle DBC = 78°$, find $m\angle ABC$.

2. If $m\angle DBC = 74°$ and $m\angle ABC = 119°$, find $m\angle ABD$.

3. If $m\angle PQR = 141°$, find each measure.

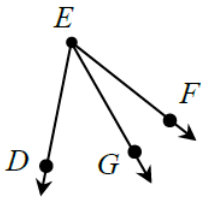


x = _____

$m\angle PQS$ = _____

$m\angle SQR$ = _____

4. If $m\angle DEF = (7x + 4)°$, $m\angle DEG = (5x + 1)°$, $m\angle GEF = 23°$ find each measure.

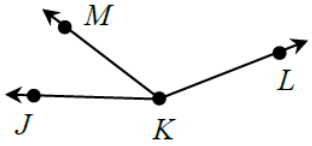


x = _____

$m\angle DEG$ = _____

$m\angle DEF$ = _____

5. If $m\angle JKM = 43°$, $m\angle MKL = (8x – 20)°$, $m\angle JKL = (10x – 11)°$, find each measure.



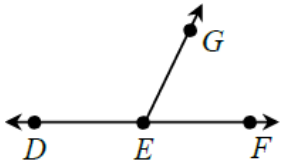
x = _____

$m\angle MKL$ = _____

$m\angle JKL$ = _____

Examples Continued

6. If $m\angle DEF$ is a straight angle, $m\angle DEG = (23x - 3)°$, and $m\angle GEF = (12x + 8)°$, find each measure.



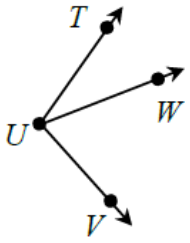
x = _____

$m\angle DEG$ = _____

$m\angle GEF$ = _____

$m\angle DEF$ = _____

7. If $m\angle TUW = (5x + 3)°$, $m\angle WUV = (10x - 5)°$, and $m\angle TUV = (17x - 16)°$, find each measure.



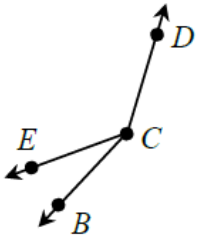
x = _____

$m\angle TUW$ = _____

$m\angle WUV$ = _____

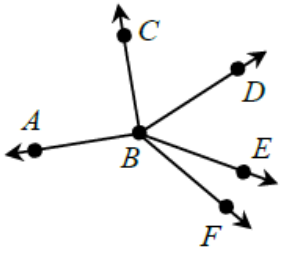
$m\angle TUV$ = _____

8. If $m\angle ECD$ is six less than five times $m\angle BCE$, and $m\angle BCD = 162°$, find each measure.



$m\angle BCE$ = _____

$m\angle ECD$ = _____



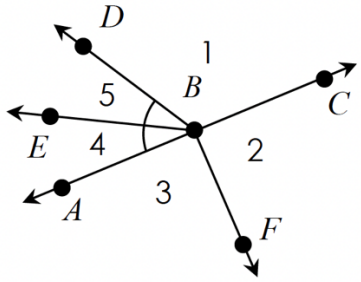
Use the diagram to the left to answer questions #9 and #10.

9. If $m\angle ABF = (6x + 26)°$, $m\angle EBF = (2x - 9)°$, and $m\angle ABE = (11x - 31)°$, find $m\angle ABF$.

10. If $\overrightarrow{BD}$ bisects $m\angle CBE$, $\overrightarrow{BC} \perp \overrightarrow{BA}$, $m\angle CBD = (3x+25)°$, and $m\angle DBE = (7x\text{-}19)°$, find $m\angle ABD$.

Homework 1.2 : Angles & Angle Addition Postulate

1. Use the diagram below to complete each part.



Given: $\overrightarrow{BF} \perp \overrightarrow{AC}$

a) Name the vertex ∠4. _____

b) Name the sides of ∠1. _____

c) Write another name for ∠5. _____

d) Classify each angle:

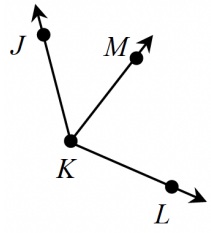
$\angle FBC$:_____ $\angle EBF$:_____ $\angle ABC$:_____

e) Name an angle bisector. _____

f) If $m\angle EBD$ = 36° and $m\angle DBC$ = 108°, find $m\angle EBC$. _____

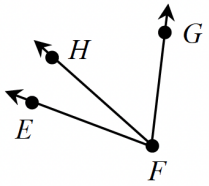
g) If $\angle EBF$ = 117°, find $m\angle ABE$. _____

2. If $m\angle MKL$ = 83°, $m\angle JKL$ = 127°, and $m\angle JKM$ = (9x – 10)°, find the value of x.



x = _____

3. If $m\angle EFH$ = (5x + 1)°, $m\angle HFG$ = 62°, and $m\angle EFG$ = (18x + 11)°, find each measure.

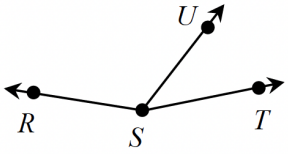


x = _____

$m\angle EFH$ = _____

$m\angle EFG$ = _____

4. If $m\angle RST$ = (12x – 1)°, $m\angle RSU$ = (9x – 15)°, and $m\angle UST$ = 53°, find each measure.

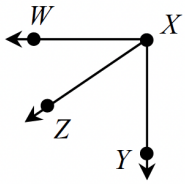


x = _____

$m\angle RST$ = _____

$m\angle RSU$ = _____

5. If $m\angle WXZ$ = (5x + 3)°, $m\angle ZXY$ = (8x – 4)°, and $\angle WXY$ is a right angle, find each measure.

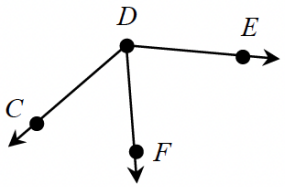


x = _____

$m\angle WXZ$ = _____

$m\angle ZXY$ = _____

6. If $m\angle CDF = (3x + 14)°$, $m\angle FDE = (5x - 2)°$, and $m\angle UST = (10x - 18)°$, find each measure.



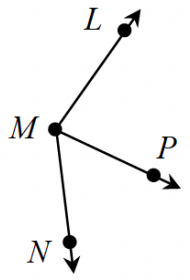
$x =$ _____

$m\angle CDF =$ _____

$m\angle FDE =$ _____

$m\angle CDE =$ _____

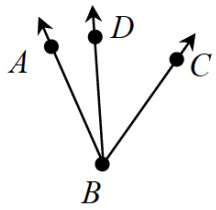
7. If $m\angle LMP$ is 11 degrees more than $m\angle NMP$ and $m\angle NML = 137°$, find each measure.



$m\angle LMP =$ _____

$m\angle NMP =$ _____

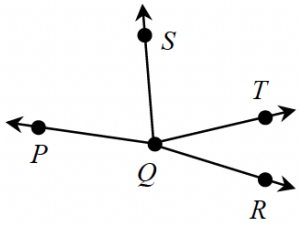
8. If $m\angle ABC$ is one degree less than three times $m\angle ABD$ and $m\angle DBC = 47°$, find each measure.



$m\angle ABD =$ _____

$m\angle ABC =$ _____

9. If $\overrightarrow{QS}$ bisects $\angle PQT$, $m\angle SQT = (8x - 25)°$, $\angle PQT = (9x + 34)°$, and $\angle SQR = 112°$ find each measure.



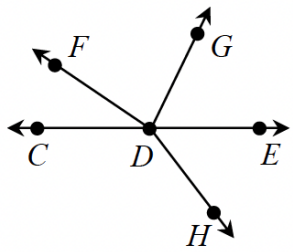
$x =$ _____

$m\angle PQS =$ _____

$m\angle PQT =$ _____

$m\angle TQR =$ _____

10. If $\angle CDE$ is a straight angle, $\overrightarrow{DE}$ bisects $\angle GDH$, $m\angle GDE = (8x - 1)°$, $\angle EDH = (6x + 15)°$, and $\angle CDF = 43°$ find each measure.



$x =$ _____

$m\angle GDH =$ _____

$m\angle FDH =$ _____

$m\angle FDE =$ _____

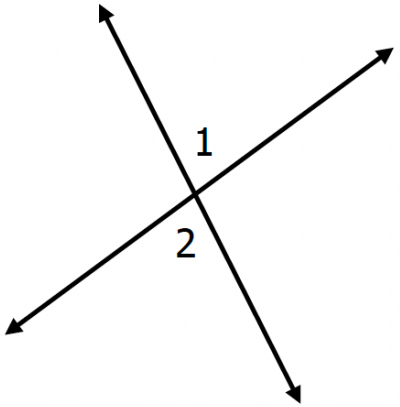
1.3 Angle Pairs & Angle Relationships

Lesson Objective: I can identify different angle pairs and use their relationships to find other angle measures.

Adjacent Angles Two angles that are **next to** each other and share a common side.	
Complementary Angles Any two angles whose **sum is 90o**	
Supplementary Angles Any two angles whose **sum is 180o**	
Linear Pair Two angles that are **adjacent** and **supplementary**. They form **a straight line!**	
Vertical Angles Two angles **across** from each other on intersecting lines. They are always **congruent!**	

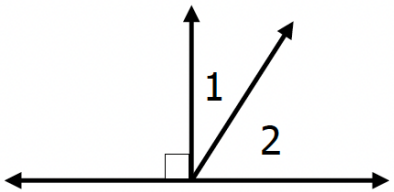
Identifying Types of Angles: Check all relationships between ∠1 and ∠2.

1



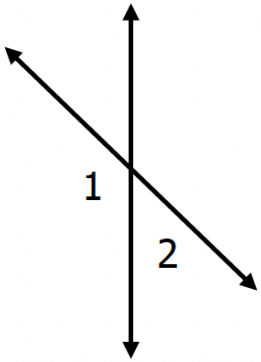
- ❑ Adjacent
- ❑ Vertical
- ❑ Complementary
- ❑ Supplementary
- ❑ Linear Pair

2



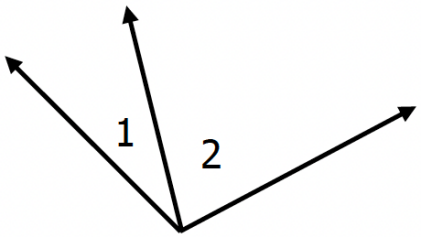
- ❑ Adjacent
- ❑ Vertical
- ❑ Complementary
- ❑ Supplementary
- ❑ Linear Pair

3



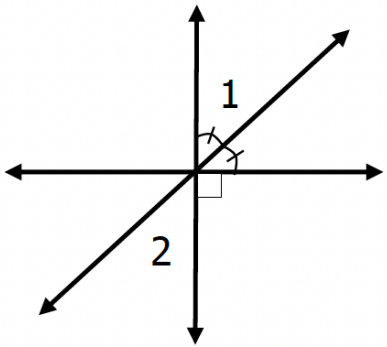
- ❑ Adjacent
- ❑ Vertical
- ❑ Complementary
- ❑ Supplementary
- ❑ Linear Pair

4



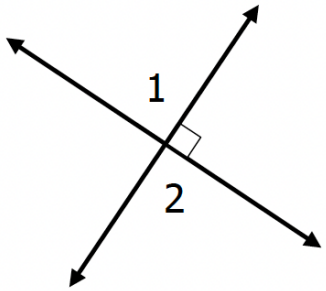
- ❑ Adjacent
- ❑ Vertical
- ❑ Complementary
- ❑ Supplementary
- ❑ Linear Pair

5



- ❑ Adjacent
- ❑ Vertical
- ❑ Complementary
- ❑ Supplementary
- ❑ Linear Pair

6

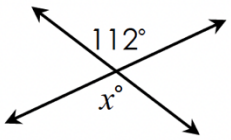


- ❑ Adjacent
- ❑ Vertical
- ❑ Complementary
- ❑ Supplementary
- ❑ Linear Pair

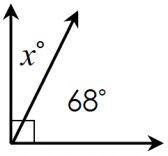
Using Angle Relationships to find Angle Measures

Directions: Find the missing measures in each figure. Keep the angle relationships in mind.

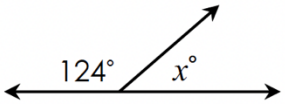
1.



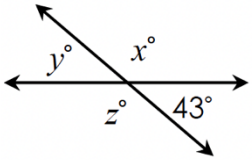
2.



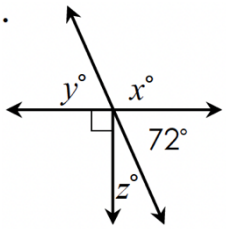
3.



4.



5.



6. ∠1 and ∠2 are vertical angles. If the measure of ∠2 is 105°, find the measure of ∠1.

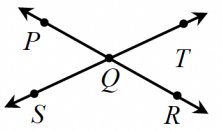
7. ∠$\boldsymbol{A}$ and ∠$\boldsymbol{B}$ are complementary angles. If the measure of ∠$\boldsymbol{A}$ is 42°, find the measure of ∠$\boldsymbol{B}$.

8. ∠$\boldsymbol{P}$ and ∠$\boldsymbol{Q}$ are supplementary angles. If the measure of ∠$\boldsymbol{Q}$ is 64°, find the measure of ∠$\boldsymbol{P}$.

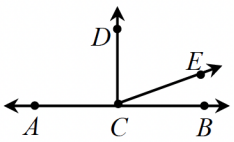
9. ∠1 and ∠2 form a linear pair. If the measure of ∠1 is 113°, find the measure of ∠2.

Using Algebra!

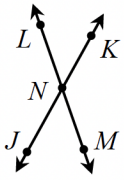
10. If $m\angle PQT = (3x + 47)°$ and $m\angle SQR = (6x - 25)°$, find the measure of ∠$\boldsymbol{SQR}$.



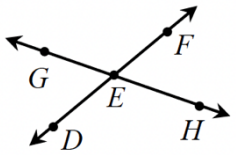
11. If $\overleftrightarrow{AB} \perp \overleftrightarrow{CD}$, $m\angle DCE = (7x + 2)°$ and $m\angle ECB = (x + 8)°$, find the measure of ∠$\boldsymbol{DCE}$.



12. If $m\angle KNM = (8x - 5)°$ and $m\angle MNJ = (4x - 19)°$, find the measure of ∠$\boldsymbol{KNM}$.



13. If $\boldsymbol{m\angle DEG}$ = $(5x - 4)°$, $\boldsymbol{m\angle GEF}$ = $(7x - 8)°$, $\boldsymbol{m\angle DEH}$ = $(9y + 5)°$ find the values of x and y.



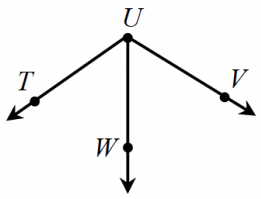
14. $\angle\boldsymbol{R}$ and $\angle\boldsymbol{S}$ are complementary angles. If $\boldsymbol{m\angle R}$ = $(12x - 3)°$ and $\boldsymbol{m\angle S}$ = $(7x - 2)°$, find $\boldsymbol{m\angle R}$.

15. $\angle\boldsymbol{P}$ and $\angle\boldsymbol{Q}$ are supplementary angles. If $\boldsymbol{m\angle P}$ = $(4x + 1)°$ and $\boldsymbol{m\angle Q}$ = $(9x - 3)°$, find $\boldsymbol{m\angle Q}$.

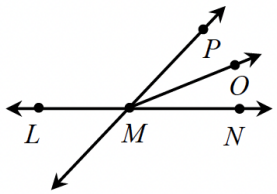
16. $\angle 1$ and $\angle 2$ form a linear pair. The measure of $\angle 2$ is six more than twice the measure of $\angle 1$. Find $\boldsymbol{m}\angle 2$.

17. $\angle\boldsymbol{J}$ and $\angle\boldsymbol{K}$ are complementary angles. The measure of $\angle\boldsymbol{J}$ is 18 less than the measure of $\angle\boldsymbol{K}$. Find the measure of each angle.

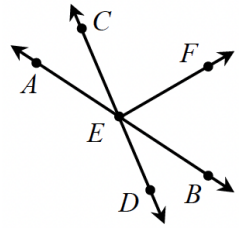
18. If $\overrightarrow{\boldsymbol{UW}}$ bisects $\angle\boldsymbol{TUV}$, $\boldsymbol{m\angle TUW}$ = $(13x - 5)°$ and $\boldsymbol{m\angle WUV}$ = $(7x + 31)°$, find the value of x.



19. If $\overrightarrow{\boldsymbol{MO}}$ bisects $\angle\boldsymbol{PMN}$, $\boldsymbol{m\angle PMN}$ = $74°$ and $\boldsymbol{m\angle OMN}$ = $(2x + 7)°$, find the value of x.

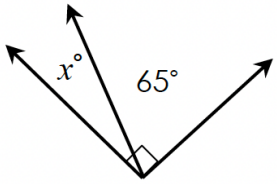


20. If $\overrightarrow{\boldsymbol{EF}}$ bisects $\angle\boldsymbol{CEB}$, $\boldsymbol{m\angle CEF}$ = $(7x + 21)°$ and $\boldsymbol{m\angle FEB}$ = $(10x - 3)°$, find the value of $\angle\boldsymbol{DEB}$.

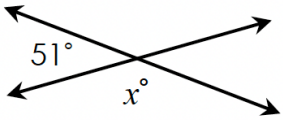


Homework 1.3 : Angle Pairs & Relationships

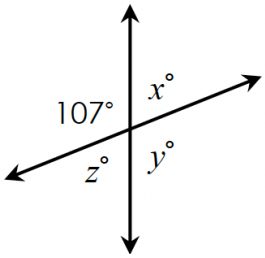
1. Find the missing measure



2. Find the missing measure.



3. Find the missing measure



4. If the measure of an angle is 13°, find the measure of its supplement.

5. If the measure of an angle is 38°, find the measure of its complement.

6. ∠1 and ∠2 form a linear pair. If $m\angle 1 = (5x + 9)°$ and $\boldsymbol{m}\angle 2 = (3x + 11)°$, find the measure of each angle.

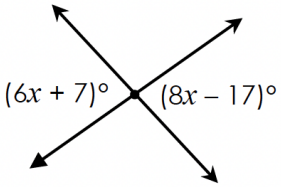
7. ∠1 and ∠2 are vertical angles. If $m\angle 1 = (17x + 1)°$ and $\boldsymbol{m}\angle 2 = (20x - 14)°$, find $\boldsymbol{m}\angle 2$.

8. $\angle K$ and $\angle L$ are complementary angles. If $m\angle K = (3x + 3)°$ and $\boldsymbol{m}\angle L = (10x - 4)°$, find the measure of each angle.

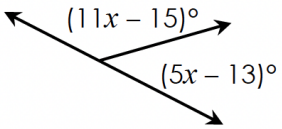
9. If $m\angle P$ is three less than twice the measure of $\angle Q$, and $\angle P$ and $\angle Q$ are supplementary angles, find the measure of each angle.

10. If $m\angle B$ is two more than three times the measure of $\angle C$, and $\angle B$ and $\angle C$ are complementary angles, find the measure of each angle.

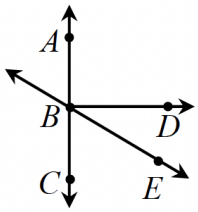
11. Find the value of x.



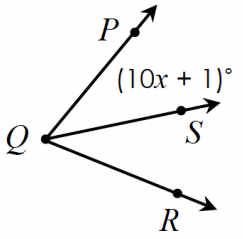
12. Find the value of x.



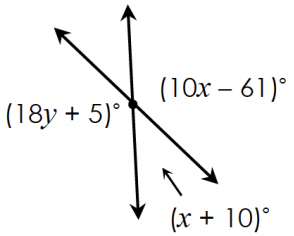
13. If $\overrightarrow{BD} \perp \overrightarrow{AC}$, $m\angle DBE = (2x - 1)°$, and $m\angle CBE = (5x - 42)°$, find the value of x.



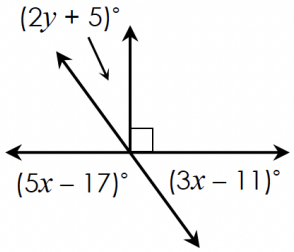
14. Find the value of x if $\overrightarrow{QS}$ bisects $\angle PQR$ and $m\angle PQR = 82°$.



15. Find the values of x and y.



16. Find the values of x and y.



17. If $\overrightarrow{NP}$ bisects $\angle MNQ$, $m\angle MNQ = (8x + 12)°$, $m\angle PNQ = 78°$, and $m\angle RNM = (3y - 9)°$, find the values of x and y.