

# Unit 7 Check Sheet

Name \_\_\_\_\_ Per \_\_\_\_\_

## Tools of Geometry

(Print)

- Check sheet must be turned in to receive Homework & Quiz points.
- All quiz corrections must be done for test score to replace quiz scores.
- No check sheet = No Points.
- Write quiz scores as fractions
- Lost Quizzes count as a 0.
- Quiz ratio is total points scored on quizzes and pre-test out of total possible
- Order (from top to bottom)
  - Check sheet,
  - **Quiz 1, 2, Pre-Test**
  - **Quiz corrections**

Section	HMK
<b>7.2 Points, Lines, and Planes</b> Worksheet 7.2 #1-35 all	
<b>7.3 Measuring Segments</b> Worksheet 7.3 #1-25 all Quiz 1	
<b>7.4 Measuring Angles</b> Worksheet 7.4 #1-24 all	
<b>7.5 Exploring Angle Pairs</b> Worksheet 7.5 #1-27 all	
<b>7.6 Midpoint and Distance in the Coordinate Plane</b> Worksheet 7.6 #1-21	
<b>7.6B Matching Flashcards Activity</b> Quiz 2	
<b>Review</b> Review Worksheet #1-16 all Pre-Test	
Unit Test	

Quiz 1: \_\_\_\_\_  
Score/Possible

Quiz 2: \_\_\_\_\_  
Score/Possible

Pre-Test: \_\_\_\_\_  
Score/Possible

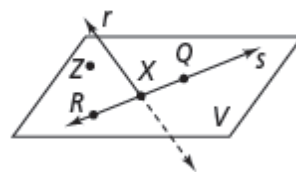
Total Quiz Ratio: \_\_\_\_\_  
Total Score/Total Possible

## 7.2 Practice

Form K

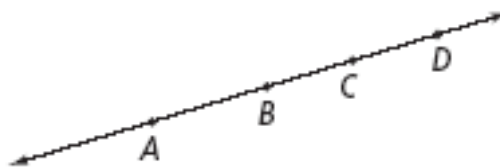
### Points, Lines, and Planes

Use the figure at the right for Exercises 1–4. Note that line  $r$  pierces the plane at  $X$ . It is not coplanar with  $V$ .



1. What are two other ways to name  $\overline{QX}$ ?  
 To start, remember you can name a line by any \_\_\_\_\_?  
 point(s) on the line or by \_\_\_\_\_? lowercase letter(s).  
 Two other ways to name  $\overline{QX}$  are line \_\_\_\_\_? and \_\_\_\_\_?
2. What are two other ways to name plane  $V$ ?
3. Name three collinear points.
4. Name four coplanar points.

Use the figure at the right for Exercises 5–7.



5. Name six segments in the figure. To start, remember that a segment is part of a line that consists of \_\_\_\_\_? \_\_\_\_\_? endpoints.  
 Six segments are  $\overline{AB}$ ,  $\overline{BC}$ , \_\_\_\_\_? \_\_\_\_\_?, \_\_\_\_\_? \_\_\_\_\_?, and \_\_\_\_\_? \_\_\_\_\_?.
6. Name the 4 rays in the figure.
7.
  - a. Name the pairs of opposite rays with endpoint  $C$
  - b. Name another pair of opposite rays.

For Exercises 8–12, determine whether each statement is *always*, *sometimes*, or *never* true.

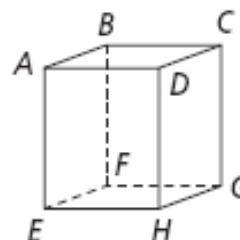
8. Plane  $ABC$  and plane  $DEF$  are the same plane.
9.  $\overline{DE}$  and  $\overline{DF}$  are the same line.
10. Plane  $XYZ$  does not contain point  $Z$ .
11. All the points of a line are coplanar.
12. Two rays that share an endpoint form a line.

**Practice** (continued)

Form K

Points, Lines, and Planes

Use the figure at the right for Exercises 13–21.



Name the intersection of each pair of planes. To start, identify the points that both planes contain.

- 13. planes  $DCG$  and  $EFG$
- 14. planes  $EFG$  and  $ADH$
- 15. planes  $BCG$  and  $ABF$

Name two planes that intersect in the given line. To start, identify the planes that contain the given line

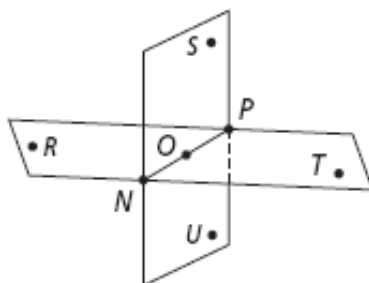
- 16.  $\overline{CD}$
- 17.  $\overline{DH}$
- 18.  $\overline{EF}$

Copy the figure. Shade the plane that contains the given points.

- 19.  $A, B, C$
- 20.  $C, D, H$
- 21.  $E, H, B$

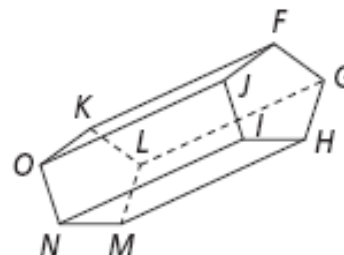
Postulate 1-4 states that any three noncollinear points lie in one plane. Find the plane that contains the first three points listed. Then determine whether the fourth point is in that plane. Write *coplanar* or *noncoplanar* to describe the points.

- 22.  $P, T, R, N$
- 24.  $T, R, N, U$



Use the diagram at the right. How many planes contain each line and point?

- 26.  $\overline{KL}$  and  $G$
- 27.  $\overline{HM}$  and  $F$
- 28.  $\overline{JI}$  and  $G$
- 29.  $\overline{NM}$  and  $M$

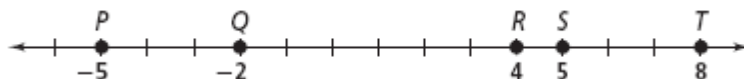


## 7.3 Practice

Form K

### Measuring Segments

Find the length of each segment. To start, find the coordinate of each endpoint.



1.  $\overline{PR}$                       2.  $\overline{QT}$                       3.  $\overline{QS}$

Use the number line at the right for Exercises 4–6.



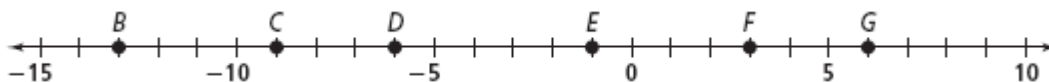
4. If  $GH = 31$  and  $HI = 11$ , then  $GI = \square$ .

5. If  $GH = 45$  and  $GI = 61$ , then  $HI = \square$ .

6. **Algebra**  $GH = 7y + 3$ ,  $HI = 3y - 5$ , and  $GI = 9y + 7$ .

- What is the value of  $y$ ?
- Find  $GH$ ,  $HI$ , and  $GI$ .

Use the number line below for Exercises 7–9. Tell whether the segments are congruent. To start, use the definition of distance. Use the coordinates of the points to write an equation for each distance.



7.  $\overline{CE}$  and  $\overline{FD}$                       8.  $\overline{CD}$  and  $\overline{FG}$                       9.  $\overline{GE}$  and  $\overline{BD}$

For Exercises 10–12, use the figure below. Find the value of  $KL$ .

10.  $KL = 3x + 2$  and  $LM = 5x - 10$

11.  $KL = 8x - 5$  and  $LM = 6x + 3$

12.  $KL = 4x + 7$  and  $LM = 5x - 4$



On a number line, the coordinates of  $D$ ,  $E$ ,  $F$ ,  $G$ , and  $H$  are  $-9$ ,  $-2$ ,  $0$ ,  $3$ , and  $5$ , respectively. Find the lengths of the two segments. Then tell whether they are congruent.

13.  $\overline{DG}$  and  $\overline{DH}$                       14.  $\overline{DE}$  and  $\overline{EH}$   
 15.  $\overline{EG}$  and  $\overline{GH}$                       16.  $\overline{EG}$  and  $\overline{FH}$

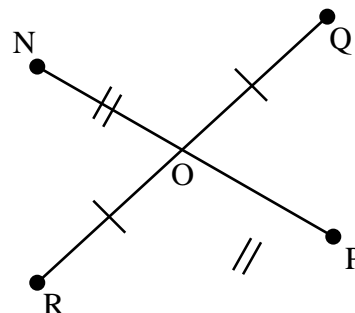
**Practice** (continued)

Form K

Measuring Segments

17. Suppose the coordinate of  $P$  is 2,  $PQ = 8$ . There are two possible coordinates of where point  $Q$  could be.
- a) If  $Q$  is on the positive side of 2,  $Q$  will be at the number \_\_\_\_\_
  - b) If  $Q$  is on the positive side of 2, what is the midpoint of  $\overline{PQ}$ ?
  - c) If  $Q$  is on the negative side of 2,  $Q$  will be at the number \_\_\_\_\_
  - b) If  $Q$  is on the negative side of 2, what is the midpoint of  $\overline{PQ}$ ?
18. Suppose point  $J$  has a coordinate of  $-2$  and  $JK = 4$ . What are the possible coordinates of point  $K$ ?
19. Suppose point  $X$  has a coordinate of 5 and  $XY = 10$ . What are the possible coordinates of point  $Y$ ?

**Algebra Use the diagram at the right for Exercises 28–32.**



20. If  $NO = 17$  and  $NP = 5x - 6$ , find the value of  $x$ .  
Then find  $NP$  and  $OP$ .
21. If  $RO = 6 + x$  and  $OQ = 2x + 1$ , find the value of  $x$ .  
Then find  $RO$ ,  $OQ$ , and  $RQ$ .
22. If  $NO = 3x + 4$  and  $NP = 10x - 10$ , find the value of  $x$ .  
Then find  $NO$ ,  $NP$ , and  $OP$ .
23. If  $RO = 5x$  and  $RQ = 12x - 20$ , find the value of  $x$ .  
Then find  $RO$ ,  $OQ$ , and  $RQ$ .
24. **Vocabulary** What term describes the relationship between  $\overline{NP}$  and  $\overline{RQ}$ ?
25. **Reasoning** If  $KL = 5$  and  $KJ = 10$ , is it possible that  $LJ = 5$ ? Explain.

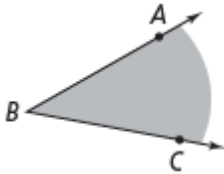
## 7.4 Practice

Form K

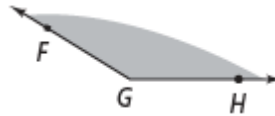
### Measuring Angles

Name each shaded angle in three different ways.

1.



2.



3.



Use the diagram below. Find the measure of each angle. Then classify each angle as *acute*, *right*, *obtuse*, or *straight*.

4.  $m \angle AFB =$

This angle is a(n)    ?    angle

5.  $m \angle AFD =$

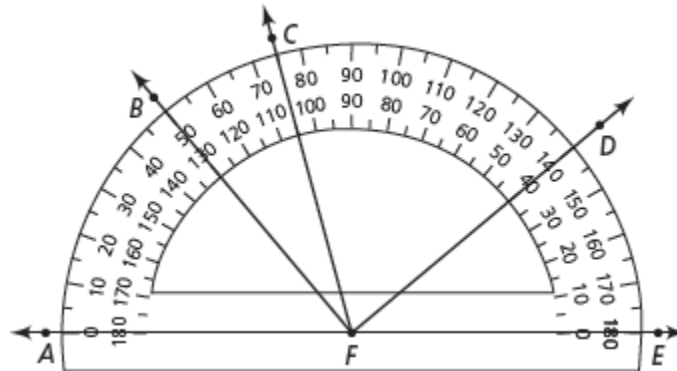
6.  $m \angle CFD =$

7.  $m \angle BFD =$

8.  $m \angle AFE =$

9.  $m \angle BFE =$

10.  $m \angle AFC =$



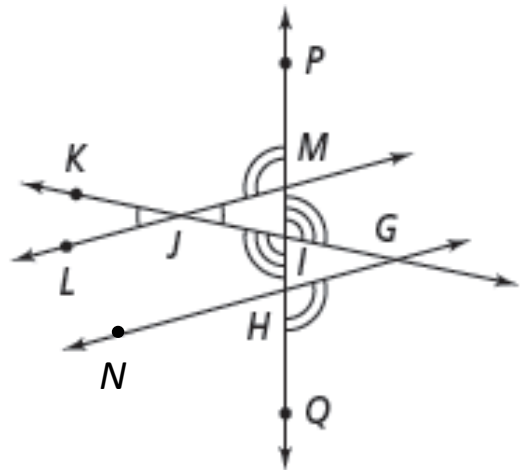
Use the diagram at the right. Complete each statement.

11.  $\angle MIG \cong$

12.  $\angle PMJ \cong$

13. If  $m \angle KJL = 30$ , then  $m \angle$    $= 30$ .

14. If  $m \angle LMP = 100$ , then  $m \angle QHG =$  .

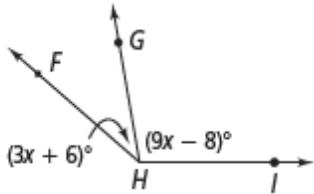


**Practice** (continued)

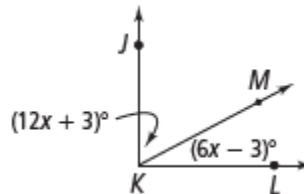
Form K

Measuring Angles

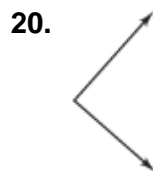
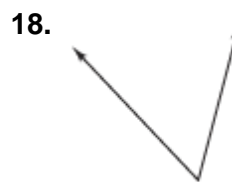
15. If  $m\angle FHI = 142$ , what are  $m\angle FHG$  and  $m\angle GHI$  ?



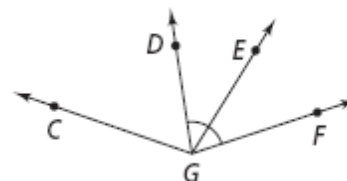
16.  $\angle JKL$  is a right angle. What are  $m\angle JKM$  and  $m\angle MKL$ ?



Use a protractor. Measure and classify each angle.



**Algebra** Use the diagram at the right for Exercises 21–23. Solve for  $x$ . Find the angle measures to check your work.



21.  $m\angle CGD = 4x + 2$ ,  $m\angle DGE = 3x - 5$ ,  
 $m\angle EGF = 2x + 10$
22.  $m\angle CGD = 2x - 2$ ,  $m\angle EGF = 37$ ,  $m\angle CGF = 7x + 2$
23. If  $m\angle DGF = 72$ , what equation can you use to find  $m\angle EGF$ ?

24. The flag of the United Kingdom is shown at the right. Draw on the flag and label at least two of each type of angle:

- a. acute                      b. obtuse  
 c. right                        d. straight



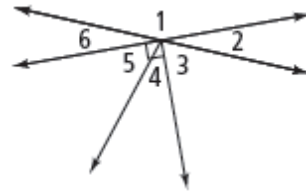
## 7.5 Practice

Form K

### Exploring Angle Pairs

Use the diagram at the right. Is each statement true? Explain.

1.  $\angle 5$  and  $\angle 4$  are supplementary angles.
2.  $\angle 6$  and  $\angle 5$  are adjacent angles.
3.  $\angle 1$  and  $\angle 2$  are a linear pair.



Name an angle or angles in the diagram described by each of the following.

4. a pair of vertical angles

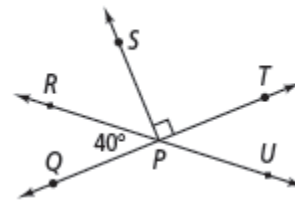
5. supplementary to  $\angle RPS$

To start, remember that supplementary angles are two angles whose measures have a sum of .

6. a pair of complementary angles

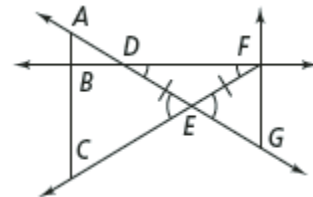
To start, remember that complementary angles are two angles whose measures have a sum of .

7. adjacent to  $\angle TPU$



For Exercises 8–11, can you make each conclusion from the information in the diagram? Explain.

8.  $\angle CEG \cong \angle FED$
9.  $\overline{DE} \cong \overline{EF}$

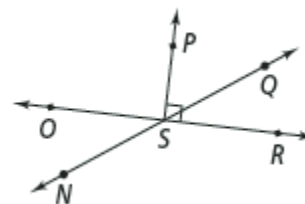


10.  $\angle BCE \cong \angle BAD$
11.  $\angle ADB$  and  $\angle FDE$  are vertical angles.

Use the diagram at the right for Exercises 12 and 13.

12. Name two pairs of angles that form a linear pair.

13. Name two pairs of angles that are complementary.





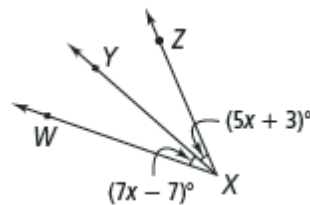
**Practice** (continued)

Form K

Exploring Angle Pairs

**14. Algebra** In the diagram,  $\overline{XY}$  bisects  $\angle WXZ$ .

- a. Solve for  $x$  and find  $m\angle WXY$ .
- b. Find  $m\angle YXZ$ .
- c. Find  $m\angle WXZ$ .



**Algebra**  $\overline{QR}$  bisects  $\angle PQS$ . Solve for  $x$  and find  $m\angle PQS$ . (Hint: Draw a diagram)

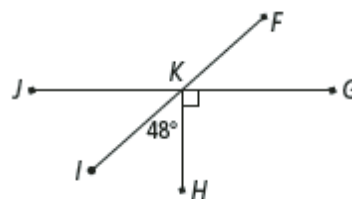
15.  $m\angle PQR = 3x$ ,  $m\angle RQS = 4x - 9$
16.  $m\angle PQS = 4x - 6$ ,  $m\angle PQR = x + 11$
17.  $m\angle PQR = 5x - 4$ ,  $m\angle SQR = 3x + 10$
18.  $m\angle PQR = 8x + 1$ ,  $m\angle SQR = 6x + 7$

**Algebra** Find the measure of each angle in the angle pair described.

19. The measure of one angle is 5 times the measure of its complement.
20. The measure of an angle is 30 less than twice its supplement.
21. **Draw a Diagram** Make a diagram that matches the following description.
  - $\angle 1$  is adjacent to  $\angle 2$ .
  - $\angle 2$  and  $\angle 3$  are a linear pair.
  - $\angle 2$  and  $\angle 4$  are vertical angles.
  - $\angle 4$  and  $\angle 5$  are complementary.

In the diagram at the right,  $m\angle HKI = 48$ . Find each of the following.

- |                   |                   |
|-------------------|-------------------|
| 22. $m\angle HKJ$ | 23. $m\angle IKJ$ |
| 24. $m\angle FKG$ | 25. $m\angle FKH$ |
| 26. $m\angle FKJ$ | 27. $m\angle GKI$ |



## 7.6 Practice

Form K

### Midpoint and Distance in the Coordinate Plane

Find the coordinate of the midpoint of the segment with the given endpoints.

1. 9 and 6 To start, write the Midpoint Formula. Let  $a = 9$  and  $b = 6$ .

The coordinate of the midpoint is  $\frac{a+b}{2} = \frac{\square + \square}{2} = \square$

2. -2 and 7                      3. -3 and -13                      3. -8 and 12

Find the coordinates of the midpoint of  $\overline{LM}$ .

5.  $L(0, 0), M(9, 3)$  Use the Midpoint Formula.

x-coordinate of midpoint is  $\frac{x_1 + x_2}{2} = \frac{\square + \square}{2} = \square$

y-coordinate of midpoint is  $\frac{y_1 + y_2}{2} = \frac{\square + \square}{2} = \square$

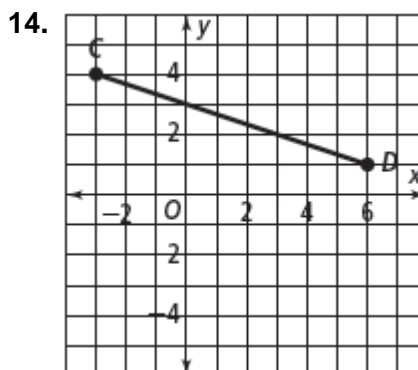
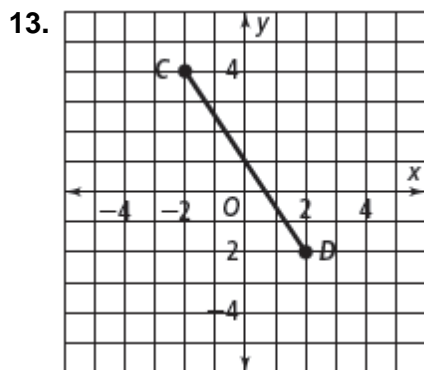
The coordinates of the midpoint are  $(\square, \square)$ .

6.  $L(2, -1), M(3, 6)$                       7.  $L(-3, 14), M(10, -4)$   
 8.  $L(-7, -4), M(5, -10)$                       9.  $L\left(9\frac{1}{2}, -2\frac{1}{4}\right), M\left(-3\frac{3}{4}, 1\frac{1}{2}\right)$

The coordinates of point  $S$  are given. The midpoint of  $\overline{RS}$  is  $(6, -10)$ . Find the coordinates of point  $R$ .

10.  $S(0, 8)$                       11.  $S(9, -3)$                       12.  $S(-2, -7)$

For each graph, find the coordinates of the midpoint of  $\overline{CD}$ .



**Practice** (continued)

Form K

Midpoint and Distance in the Coordinate Plane

Find the distance between each pair of points. If necessary, round to the nearest tenth.

15.  $K(0, 5), L(7, 9)$  Write the Distance Formula.

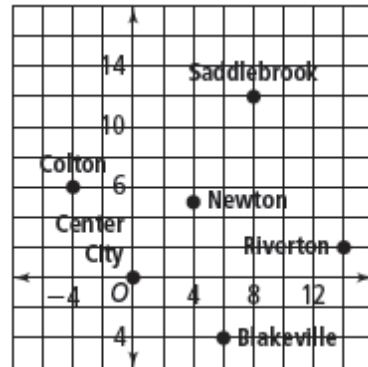
Substitute  $(0, 5)$  for  $(x_1, y_1)$  and  $(7, 9)$  for  $(x_2, y_2)$ .

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = \sqrt{(7 - \square)^2 + (9 - \square)^2} = \square$$

16.  $C(-2, 6), D(10, -8)$

17.  $G(-12, -11), H(5, -9)$

For Exercises 18–21, use the map at the right. It may be helpful to write the coordinates next to the cities. The units of the map are in miles. Find the distance between the cities to the nearest tenth.



18. Colton and Riverton

19. Saddlebrook and Riverton

20. Saddlebrook and Colton

21. Find the distance going from Colton, to Riverton, to Saddlebrook, and then back to Colton.

Point

Line

Plane

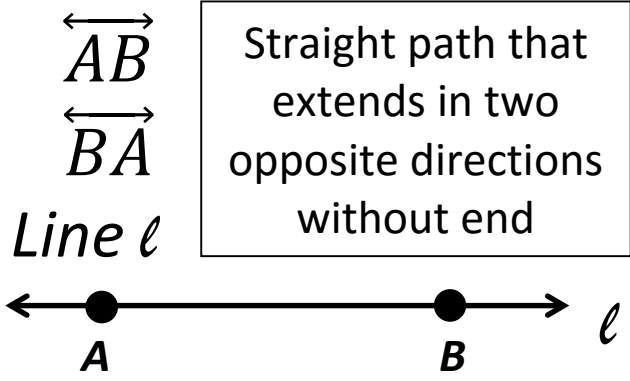
Segment

Ray

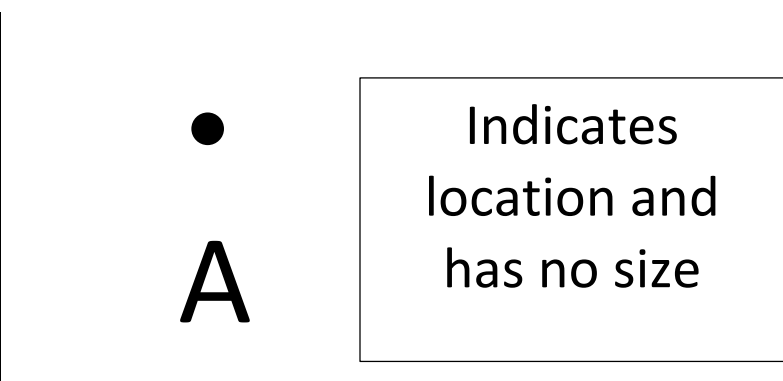
Opposite  
Rays

*JK*

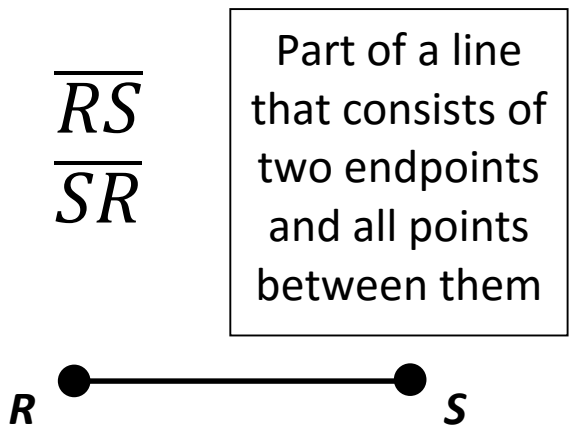
Segment  
Addition  
Postulate



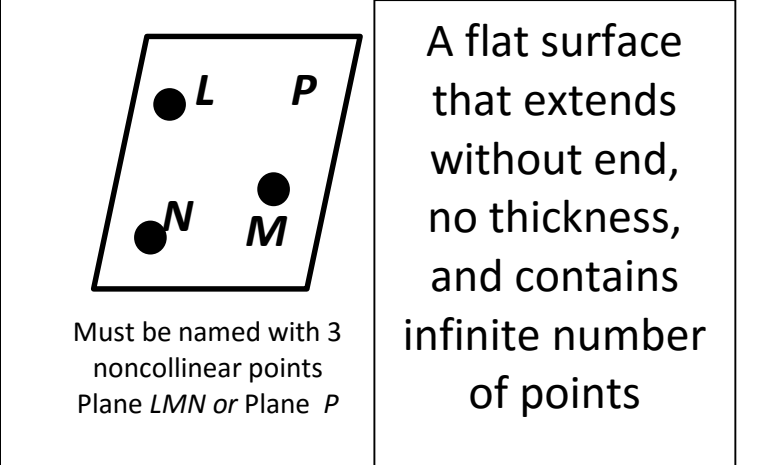
Straight path that extends in two opposite directions without end



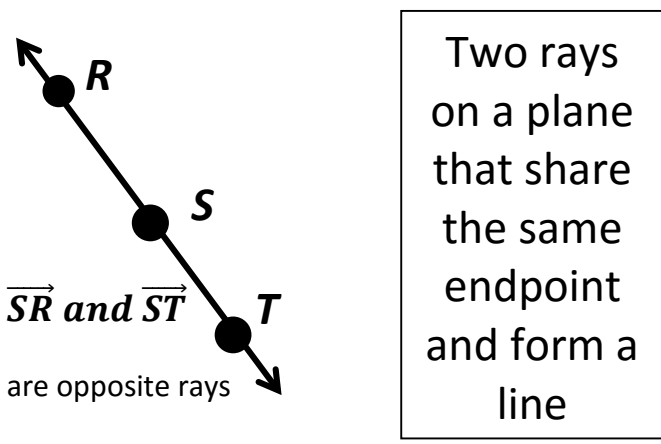
Indicates location and has no size



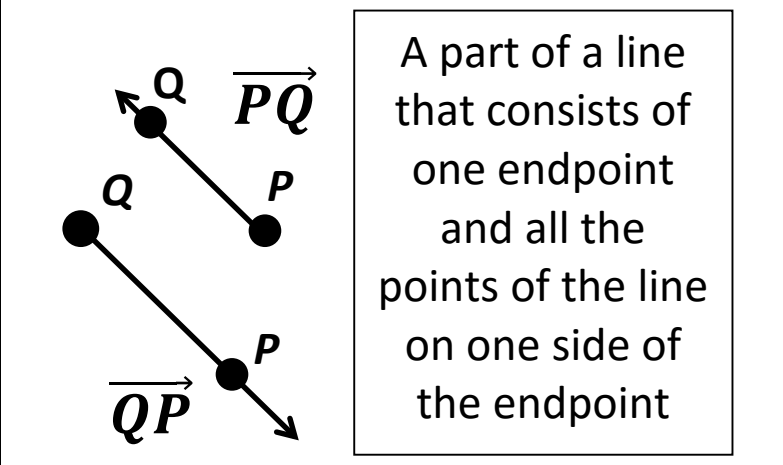
Part of a line that consists of two endpoints and all points between them



A flat surface that extends without end, no thickness, and contains infinite number of points



Two rays on a plane that share the same endpoint and form a line



A part of a line that consists of one endpoint and all the points of the line on one side of the endpoint



The length of  $\overline{JK}$

Segment  
Congruence

Midpoint of  
a segment

Segment  
Bisector

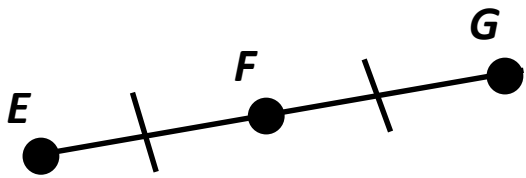
Angle

$m\angle T$

Acute Angle

Right Angle

Obtuse Angle



$F$  is the midpoint of  $\overline{EG}$

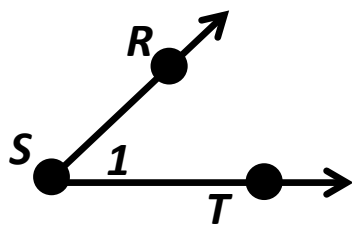
$$EF = FG$$

$$\overline{AB} \cong \overline{CD}$$

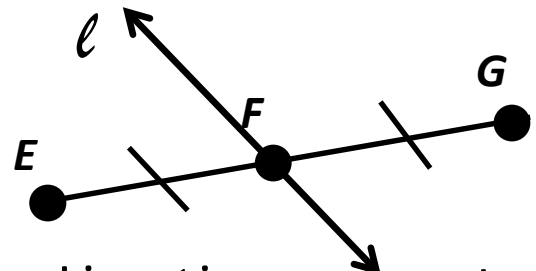
if and only if

$$AB = CD$$

Formed by 2 rays with the same endpoint

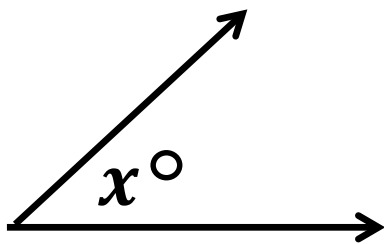


- $\angle S$
- $\angle RST$
- $\angle TSR$
- $\angle 1$



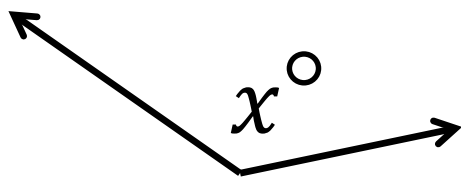
Line  $\ell$  is a segment bisector of  $\overline{EG}$

$$EF = FG$$

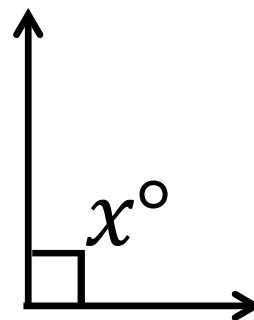


$$0^\circ < x < 90^\circ$$

The degree measure of the angle



$$90^\circ < x < 180^\circ$$



$$x = 90^\circ$$

Straight  
Angle

Congruent  
Angles

Angle Addition  
Postulate

Adjacent  
Angles

Vertical  
Angles

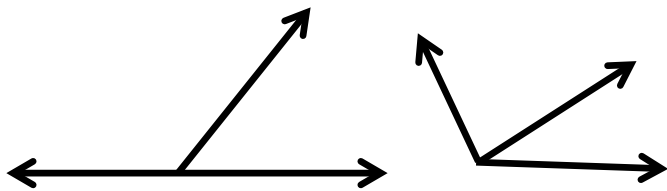
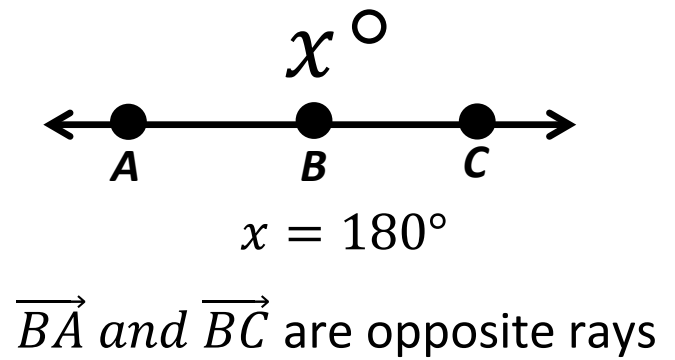
Complementary  
Angles

Linear  
Pair

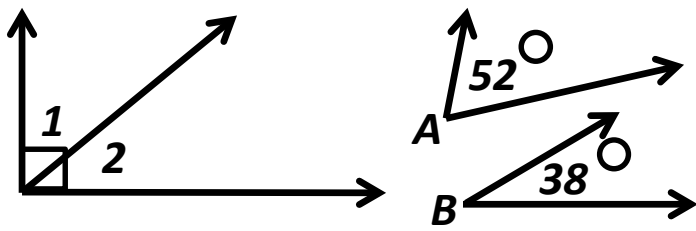
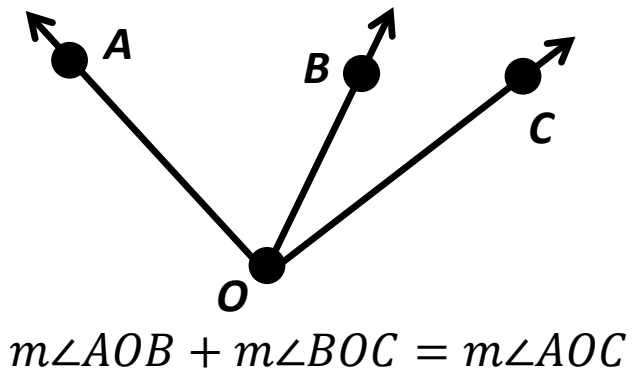
Supplementary  
Angles



$\angle A \cong \angle B$   
 if and only if  
 $m\angle A = m\angle B$

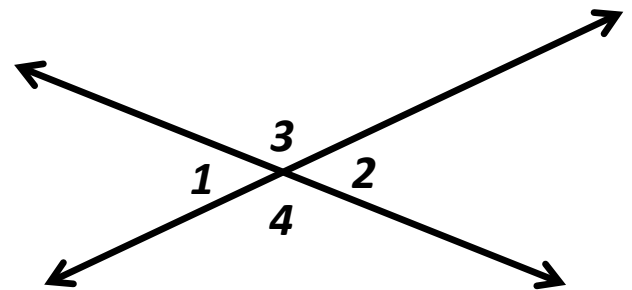


2 coplanar angles with a  
 common side, and a  
 common vertex

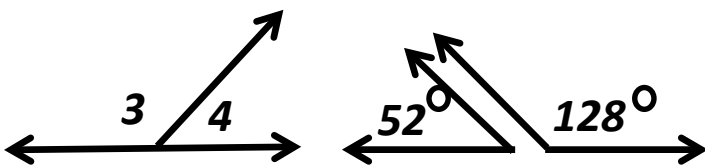


*Adjacent or Nonadjacent*

Two angles whose measures  
 have a sum of  $90^\circ$

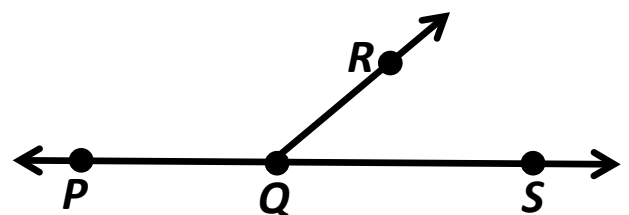


Two angles whose sides are opposite rays  
 Examples:  $\angle 1$  and  $\angle 2$ ,  $\angle 3$  and  $\angle 4$



*Adjacent or Nonadjacent*

Two angles whose measures  
 have a sum of  $180^\circ$



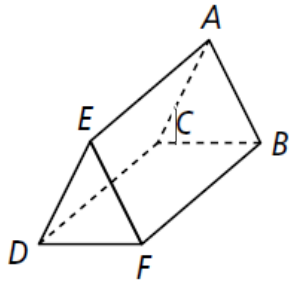


Name \_\_\_\_\_

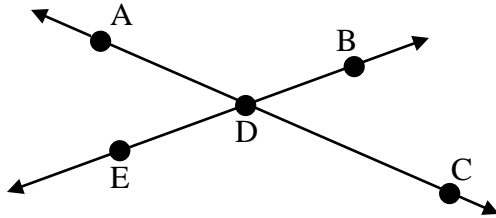
Period \_\_\_\_\_

Math 1 - Unit 7 Test Review

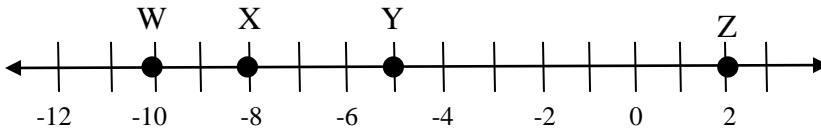
1. Use the figure below. Where do planes ABFE and ACDE intersect? Where do planes CBFD and FEAB intersect?



2. Use the figure below. Write all the ways to name  $\overleftrightarrow{AC}$ .



3. What is the length of  $\overline{XZ}$ ?

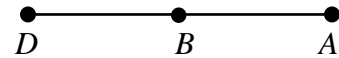


4. In the figure shown,  $B$  is the midpoint of  $\overline{DA}$ . What is  $BA$ ?

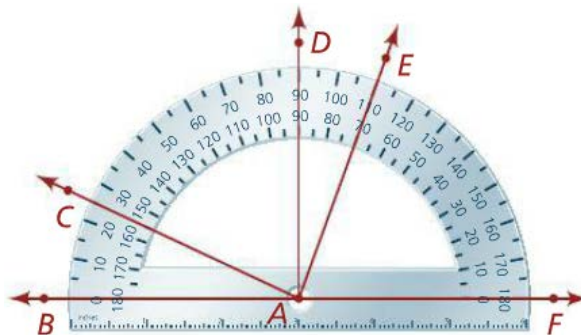
$$DB = 5x - 1,$$

$$BA = 4x + 6$$

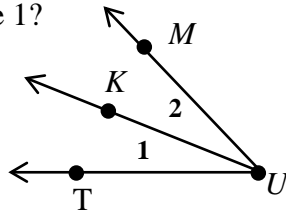
$$DA = 68$$



5. What is  $m\angle CAD$ ?

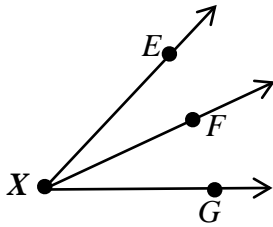


6. What are two other names for angle 1?

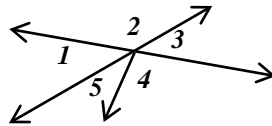


7.  $\angle JKL$  and  $\angle LKM$  are supplementary.  $m\angle JKL = 3x + 8$ , and  $m\angle LKM = 5x + 4$ . What is the  $m\angle LKM$ ?

8.  $\vec{XF}$  bisects  $\angle EXG$ . If  $m\angle EXF = 34^\circ$ , what is  $m\angle EXG$ ?



9. Which angles are vertical angles?



10. What is the other endpoint of the segment with midpoint -6 and endpoint -13?

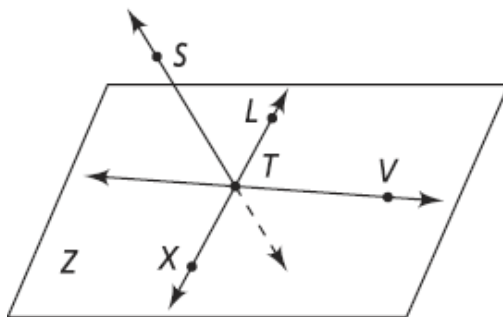
11. Point X does not lie on  $\vec{AC}$ . Can point X lie in the same plane as  $\vec{AC}$ ? Draw a diagram to support your answer.

12. Find the midpoint of  $\overline{XY}$ , if  $X(-7, 11)$  and  $Y(15, 7)$ .

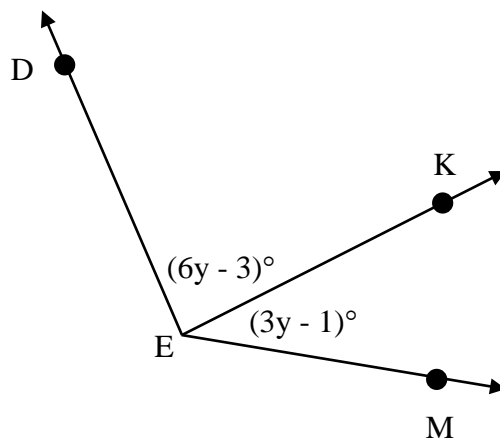
13. What is the distance between points  $K(-5, 5)$  and  $L(-3, -2)$  to the nearest tenth?

14. Use the following illustration for questions a-c.

- a. What is another name for plane LTV?
- b. Where would plane STX intersect plane Z?
- c. Name two opposite rays in the illustration.

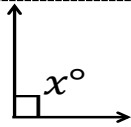
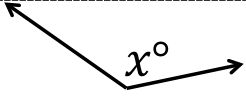
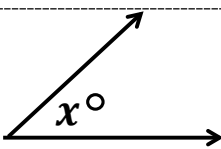
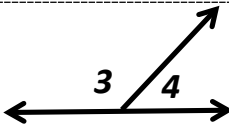
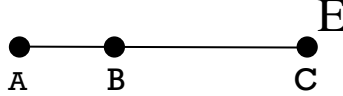
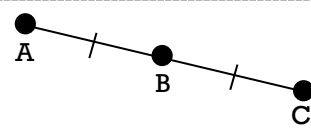
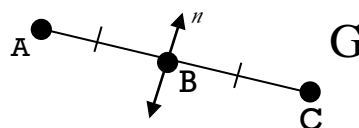
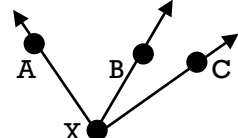


15.  $m\angle DEM = 122^\circ$ . What is  $m\angle DEK$ ?



16. For the following vocabulary words match each illustration and statement to the appropriate vocabulary words. Put the correct letter in the box.

VOCABULARY	ILLUSTRATION	STATEMENT
ACUTE ANGLE		
ANGLE ADDITION		
MIDPOINT OF A SEGMENT		
OBTUSE ANGLE		
RIGHT ANGLE		
SEGMENT ADDITION POSTULATE		
SEGMENT BISECTOR		
SUPPLEMENTARY ANGLES		

ILLUSTRATIONS	STATEMENTS
 <p>A</p>	<p>Two angles whose measures have a sum of</p> <p>I <math>180^\circ</math></p>
 <p>B</p>	<p><math>m\angle AXB + m\angle BXC = m\angle AXC</math></p> <p>J</p>
 <p>C</p>	<p>K <math>AB + BC = AC</math></p>
 <p>D</p>	<p>Line <math>n</math> is a segment</p> <p>L bisector of <math>\overline{AC}</math></p>
 <p>E</p>	<p>B is the midpoint of <math>\overline{AC}</math></p> <p>M</p>
 <p>F</p>	<p>N <math>x = 90^\circ</math></p>
 <p>G</p>	<p>O <math>0^\circ &lt; x &lt; 90^\circ</math></p>
 <p>H</p>	<p>P <math>90^\circ &lt; x &lt; 180^\circ</math></p>