

LESSON PRACTICE

Use the drawing to fill in the blanks.

1. $\angle AHC$ is adjacent to $\angle$ _____ and $\angle$ _____.

2. $\angle BHD$ is adjacent to $\angle$ _____ and $\angle$ _____.

3. $\angle FHB$ and $\angle$ _____ are vertical angles.

4. $\angle FHC$ and $\angle$ _____ are vertical angles.

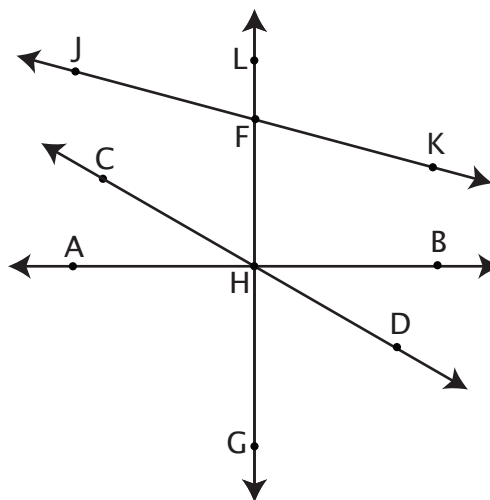
5. $\angle LFJ$ and $\angle$ _____ are supplementary angles.

6. $\angle FHC$ and $\angle$ _____ are complementary angles.

7. $\angle JFH$ and $\angle$ _____ are supplementary angles.

8. $\angle BHD$ and $\angle$ _____ are complementary angles.

9. If $m\angle CHA = 40^\circ$, then $m\angle BHD =$ _____.



Given: $\overleftrightarrow{AB}$, $\overleftrightarrow{CD}$, $\overleftrightarrow{LG}$, and $\overleftrightarrow{JK}$ are straight lines. $m\angle FHB = 90^\circ$.

The drawing is a sketch and not necessarily to scale. Don't make any assumptions about the lines and angles other than what is actually given.

Use the drawing from the previous page to fill in the blanks.

10. If $m\angle JFL = 65^\circ$, then $m\angle KFH = \underline{\hspace{2cm}}$.

11. If $m\angle FHB = 90^\circ$, then $m\angle FHA = \underline{\hspace{2cm}}$.

12. If $m\angle CHA = 40^\circ$, then $m\angle FHC = \underline{\hspace{2cm}}$.

13. If $m\angle LFJ = 65^\circ$, then $m\angle LFK = \underline{\hspace{2cm}}$.

14. If $m\angle FHB = 90^\circ$, then $m\angle AHG = \underline{\hspace{2cm}}$.

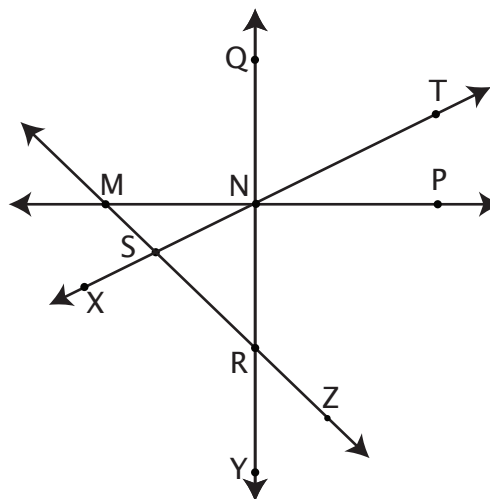
Use the letters to match each term to the best answer.

- | | |
|-------------------------------|---------------------------------|
| 15. β ____ | a. share a common ray |
| 16. adjacent angles ____ | b. alpha |
| 17. supplementary angles ____ | c. always have the same measure |
| 18. α ____ | d. add up to 90° |
| 19. complementary angles ____ | e. add up to 180° |
| 20. vertical angles ____ | f. beta |

LESSON PRACTICE

Use the drawing to fill in the blanks.

1. $\angle MNS$ is adjacent to $\angle$ _____ and $\angle$ _____.
2. $\angle QNT$ is adjacent to $\angle$ _____ and $\angle$ _____.
3. $\angle SRN$ and $\angle$ _____ are vertical angles.
4. $\angle MNS$ and $\angle$ _____ are vertical angles.
5. $\angle QNP$ and $\angle$ _____ are supplementary angles.
6. $\angle QNT$ and $\angle$ _____ are complementary angles.
7. $\angle NRZ$ and $\angle$ _____ are supplementary angles.
8. $\angle MNS$ and $\angle$ _____ are complementary angles.



Given: All lines that appear to be straight lines are straight lines.
 $m\angle QNP = 90^\circ$.

The drawing is a sketch and not necessarily to scale. Do not make any assumptions about the lines and angles other than what is actually given.

Use the drawing from the previous page to fill in the blanks.

9. If $m\angle MNS = 35^\circ$, then $m\angle SNR =$ _____.
10. If $m\angle MNS = 35^\circ$, then $m\angle TNP =$ _____.
11. If $m\angle QNP = 90^\circ$, then $m\angle PNR =$ _____.
12. If $m\angle MSN = 95^\circ$, then $m\angle NSR =$ _____.
13. If $m\angle SRN = 40^\circ$, then $m\angle YRZ =$ _____.
14. If $m\angle XNY = 55^\circ$, then $m\angle QNT =$ _____.

Fill in the blanks with the correct terms.

15. The name of the Greek letter α is _____.
16. Two angles whose measures add up to 90° are called _____.
17. Two angles whose measures add up to 180° are called _____.
18. The name of the Greek letter γ is _____.
19. Intersecting lines form two pairs of _____ angles.
20. The name of the Greek letter δ is _____.

SYSTEMATIC REVIEW

Use the drawing to fill in the blanks.

1. $\angle 1$ is adjacent to $\angle$ _____ and $\angle$ _____.

2. $\angle 1$ and $\angle$ _____ are vertical angles.

3. $\angle AFE$ and $\angle$ _____ are vertical angles.

4. $\angle$ _____ is a straight angle.

5. $\angle$ _____ is an obtuse angle.

6. $\angle 2$ and $\angle$ _____ are complementary angles.

7. If $m\angle 2 = 50^\circ$, then $m\angle 1 =$ _____. Why?

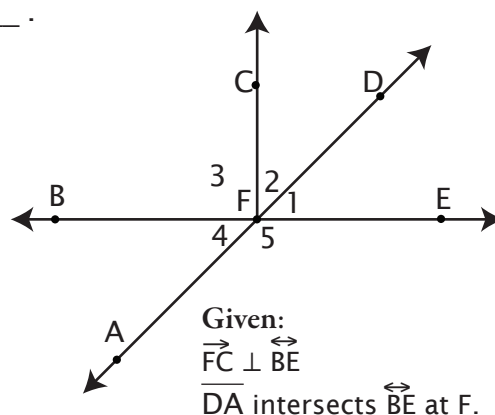
8. If $m\angle 2 = 50^\circ$, then $m\angle 4 =$ _____. Why?

9. $\angle 5$ and $\angle$ _____ are supplementary angles.

10. If $m\angle 4 = 40^\circ$, then $m\angle 5 =$ _____. Why?

11. Name two acute angles.

12. Name two right angles.



From now on, we will assume lines that look straight to be straight lines. Do not make any assumptions about the size of the angles.

Follow the directions.

13. Draw a line segment $1\frac{1}{2}$ inches long. Then draw its perpendicular bisector using compass and straightedge.
14. Draw a 52° angle and bisect it.

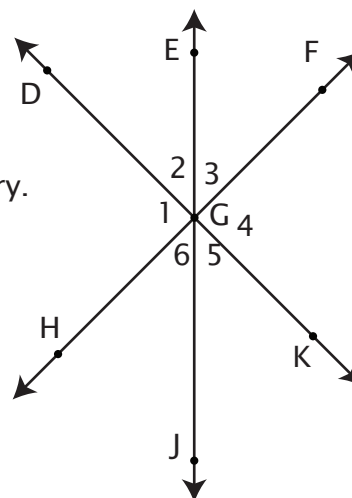
Fill in the blanks with the correct terms.

15. Two lines forming a right angle are said to be _____ to each other.
16. A right angle has a measure of _____°.
17. A straight angle has a measure of _____°.
18. The measures of two complementary angles add up to _____°.
19. The measures of two supplementary angles add up to _____°.
20. The intersection of two sets with no elements in common is the _____ set.

SYSTEMATIC REVIEW

Use the drawing to tell if each statement is true or false.

1. $\angle 2$ and $\angle 5$ are vertical angles.
2. If $\overleftrightarrow{FH} \perp \overleftrightarrow{DK}$, then $\angle 2$ and $\angle 3$ are supplementary.
3. $\angle 3$ and $\angle 4$ are adjacent angles.
4. $\angle FGK$ is known to be a right angle.
5. $\overrightarrow{GJ}$ is the common side for $\angle JGK$ and $\angle KGF$.
6. $\angle 2$, $\angle 3$, and $\angle 5$ appear to be acute.



Given:

$\overleftrightarrow{DK}$, $\overleftrightarrow{EJ}$, and $\overleftrightarrow{FH}$ intersect at G.

Lines that look straight are straight. Do not make any other assumptions.

Use the drawing to fill in the blanks.

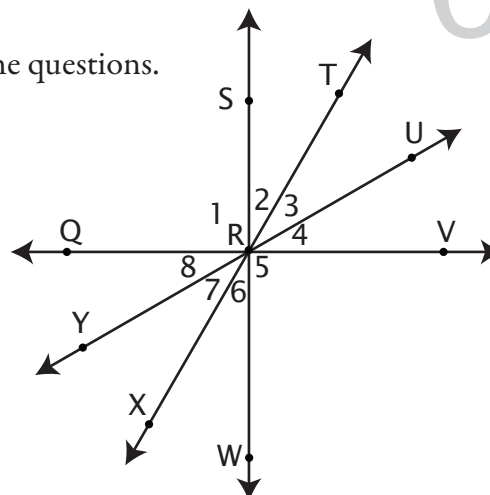
7. If $m\angle 3 = 39^\circ$, then $m\angle 6 = \underline{\hspace{2cm}}$. Why?
8. If $\overleftrightarrow{FH} \perp \overleftrightarrow{DK}$ and $m\angle 3 = 39^\circ$, then $m\angle 2 = \underline{\hspace{2cm}}$. Why?
9. If $\overleftrightarrow{FH} \perp \overleftrightarrow{DK}$, then $m\angle 1$ and $m\angle 4$ are each $\underline{\hspace{2cm}}$. Why?
10. If $m\angle 1$ is 90° , then it is a(n) $\underline{\hspace{2cm}}$ angle.
11. If the measures of $\angle 4$ and $\angle 1$ add up to 180° , they are called $\underline{\hspace{2cm}}$ angles.
12. $m\angle 1 + m\angle 2 + m\angle 3 + m\angle 4 + m\angle 5 + m\angle 6 = \underline{\hspace{2cm}}^\circ$.

Use the letters to match each description to the correct term.

- | | |
|--|------------------|
| 13. Greek letter beta _____ | a. α |
| 14. less than 90° _____ | b. complementary |
| 15. measures add up to 90° _____ | c. δ |
| 16. Greek letter alpha _____ | d. obtuse |
| 17. Greek letter gamma _____ | e. acute |
| 18. between 90° and 180° _____ | f. β |
| 19. measures add up to 180° _____ | g. γ |
| 20. Greek letter delta _____ | h. supplementary |

SYSTEMATIC REVIEW

Use the drawing to fill in the blanks or answer the questions.



1. Name a line containing $\overrightarrow{RV}$.
2. Name a line segment contained in $\overleftrightarrow{RT}$.
3. If all eight angles were congruent, rather than as given, what would the measure of each be?

Given: $\overleftrightarrow{SW} \perp \overleftrightarrow{QV}$

All four straight lines intersect at R.

4. Since $m\angle 1$ is 90° , what is $m\angle 2 + m\angle 3 + m\angle 4$?

Remember the drawing is a sketch.

5. $\angle 4 + \angle 5$ is a(n) _____ angle.

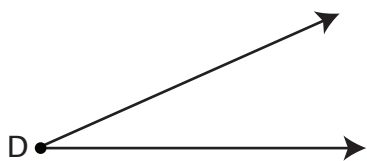
Use the measurements given in the questions, even if the drawing appears to be different.

6. Are $\angle 1$ and $\angle 5$ supplementary?
7. Are $\angle 1$ and $\angle 5$ complementary?
8. Are $\angle 1$ and $\angle 5$ vertical angles?
9. If $\angle 2 \cong \angle 3 \cong \angle 4$, then $m\angle 8 =$ _____ $^\circ$.
10. $\angle 6 \cong \angle$ _____.
11. $\angle 2$ and $\angle 3$ are _____ angles (size).
12. If $m\angle 2 = 25^\circ$, and $m\angle 4 = 35^\circ$, then $m\angle 3 =$ _____.
13. If $m\angle 2 = 25^\circ$, and $m\angle 4 = 35^\circ$, then $m\angle YRX =$ _____.
14. Which ray is the common side for $\angle SRQ$ and $\angle QRX$?

15. Draw the perpendicular bisector of the given line segment.



16. Draw a ray that bisects the given angle.



Sharpen your algebra skills!

Be very careful when squaring negative numbers.

EXAMPLE 1 $(-5)^2 = (-5)(-5) = +25$

EXAMPLE 2 $-(8)^2 = -(8)(8) = -64$

EXAMPLE 3 $-6^2 = -(6)(6) = -36$

17. $(-7)^2 =$

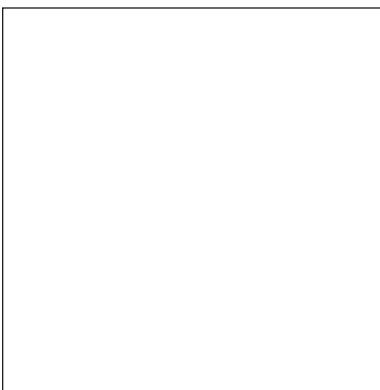
18. $-(15)^2 =$

19. $-12^2 =$

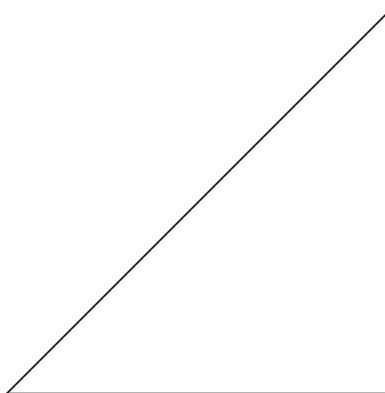
20. $-(9)^2 =$

Here are some more figures you may use to practice your bisection skills.

1. Draw the perpendicular bisectors of each line inside the square.



2. Using dotted lines or a different colored pencil, bisect each angle in the original square.
3. Draw the perpendicular bisectors of each side of the triangle. You have marked off two line segments on each side of the triangle. Now construct a perpendicular bisector for each of those line segments. What kinds of shapes do you see inside the large triangle?



4. If you wish, draw other shapes and construct bisectors as you did above. Try parallelograms, trapezoids, octagons, and other kinds of triangles for interesting results.

Read and follow the directions.

5. Lindsay's base pay is X dollars an hour. For every hour of overtime she works, she gets her base pay plus $.5X$. Last week she worked six hours of overtime. Let P be her total overtime pay for the week, and write an equation to find P .
6. Lindsay's base pay is \$8 an hour. Use the equation you wrote in #9 to find her total overtime pay for the week.