



Vocabulary

Review

Write T for *true* or F for *false*.

- \overrightarrow{AB} names a *ray* with endpoints *A* and *B*.
- You name a *ray* by its endpoint and another point on the *ray*.

Vocabulary Builder

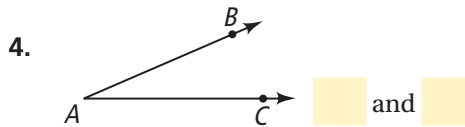
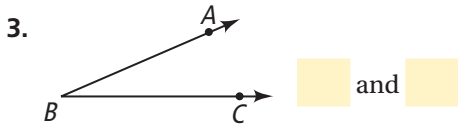
angle (noun, verb) ANG gul

Other Word Forms: angular (adjective), angle (verb), angled (adjective)

Definition: An **angle** is formed by two rays with the same endpoint.

Use Your Vocabulary

Name the rays that form each *angle*.



take note

Key Concept Angle

Definition

An **angle** is formed by two rays with the same endpoint.

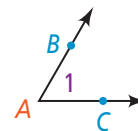
The rays are the **sides** of the angle. The endpoint is the **vertex** of the angle.

How to Name It

You can name an angle by

- its **vertex**
- a **point on each ray** and the **vertex**
- a **number**

Diagram



For Exercises 5–8, use the diagram in the Take Note on page 14. Name each part of the angle.

5. the *vertex*

6. two points that are NOT the vertex

 and

7. the *sides*

 and

8. Name the angle three ways.

by its *vertex*

by a point on each side and the vertex

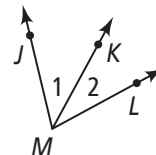
by a number



Problem 1 Naming Angles

Got It? What are two other names for $\angle KML$?

9. Cross out the ray that is NOT a ray of $\angle KML$.

 \overrightarrow{MK} \overrightarrow{MJ} \overrightarrow{ML}


10. Circle all the possible names of $\angle KML$.

 $\angle 1$ $\angle 2$ $\angle JKL$ $\angle JMK$ $\angle JML$ $\angle KMJ$ $\angle LMK$

Take note

Key Concept Types of Angles

11. Draw your own example of each type of angle.

acute

$0 < x < \text{[]}$

right

$x = \text{[]}$

obtuse

$\text{[]} < x < \text{[]}$

straight

$x = \text{[]}$

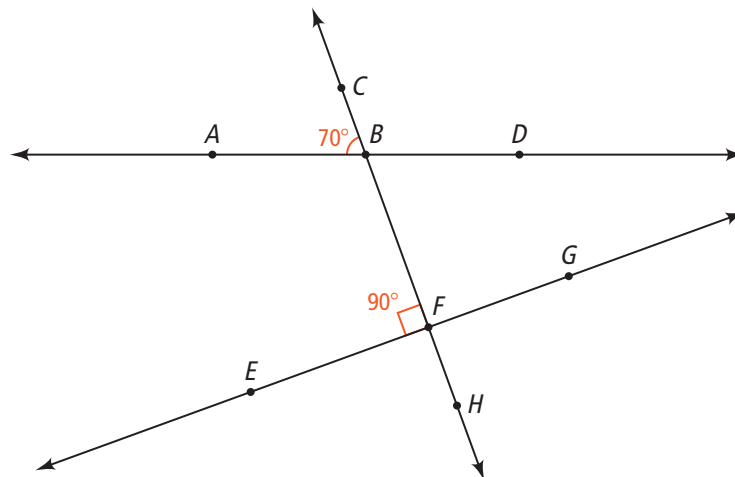
In the diagram, $m\angle ABC = 70$ and $m\angle BFE = 90$. Describe each angle as *acute*, *right*, *obtuse* or *straight*. Give an angle measure to support your description.

12. $\angle ABC$

13. $\angle CBD$

14. $\angle CFG$

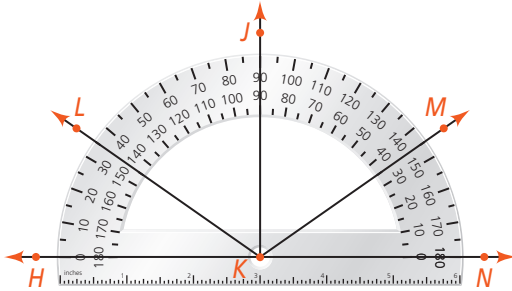
15. $\angle CFH$





Problem 2 Measuring and Classifying Angles

Got It? What are the measures of $\angle LKH$, $\angle HKN$, and $\angle MKH$ in the art below? Classify each angle as *acute*, *right*, *obtuse*, or *straight*.



16. Write the measure of each angle. Then classify each angle.

$\angle LKH$

°

$\angle HKN$

°

$\angle MKH$

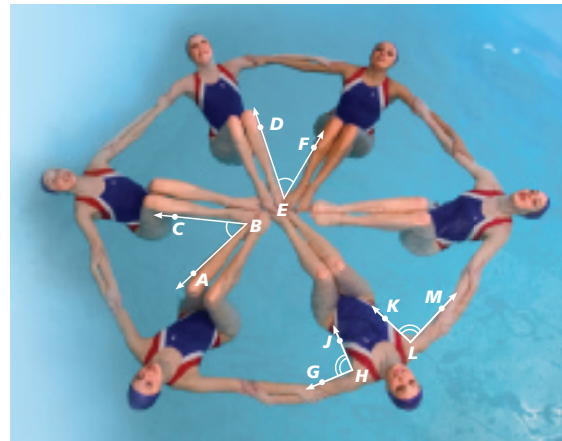
°



Problem 3 Using Congruent Angles

Got It? Use the photo at the right. If $m\angle ABC = 49$, what is $m\angle DEF$?

17. $\angle ABC$ has angle mark(s).
18. The other angle with the same number of marks is \angle .
19. Underline the correct word to complete the sentence.
 The measure of $\angle ABC$ and the measure of the angle in Exercise 18 are equal / unequal.
20. $m\angle DEF =$

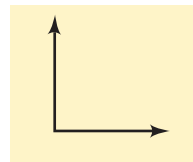


take note

Postulate 1-8 Angle Addition Postulate

If point B is in the interior of $\angle AOC$, then $m\angle AOB + m\angle BOC = m\angle AOC$.

21. Draw $\angle ABT$ with point L in the interior and $\angle ABL$ and $\angle LBT$.

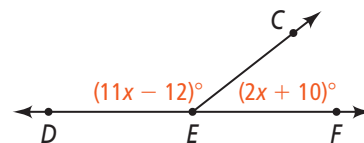


22. Complete: $m\angle ABL + m\angle$ $= m\angle$



Problem 4 Using the Angle Addition Postulate

Got It? $\angle DEF$ is a straight angle. What are $m\angle DEC$ and $m\angle CEF$?



23. Write a justification for each statement.

$$m\angle DEF = 180$$

$$m\angle DEC + m\angle CEF = 180$$

$$(11x - 12) + (2x + 10) = 180$$

$$13x - 2 = 180$$

$$13x = 182$$

$$x = 14$$

24. Use the value of x to find $m\angle DEC$ and $m\angle CEF$.

$$m\angle DEC = 11x - 12 = 11(\text{ }) - 12 = \text{ }$$

$$m\angle CEF = \text{ }$$



Lesson Check • Do you know How?

Algebra If $m\angle ABD = 85$, what is an expression to represent $m\angle ABC$?

25. Use the justifications at the right to complete the statements below.

$$m\angle ABC + m\angle CBD = m\angle ABD$$

Angle Addition Postulate

$$m\angle ABC + \text{ } = \text{ }$$

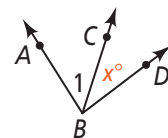
Substitute.

$$m\angle ABC + \text{ } - \text{ } = \text{ } - \text{ }$$

Subtract from each side.

$$m\angle ABC = \text{ }$$

Simplify.



Math Success

Check off the vocabulary words that you understand.

acute angle

obtuse angle

right angle

straight angle

Rate how well you can *classify angles*.

Need to review

0 2 4 6 8 10



Now I get it!