Module 8   **Points, Lines, Angles, and Triangles**
Lesson 2   **Angle Classifications and Line Relationships**

Estimate the measure of the angle.
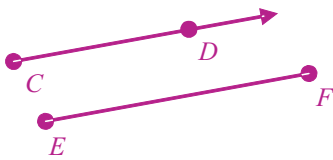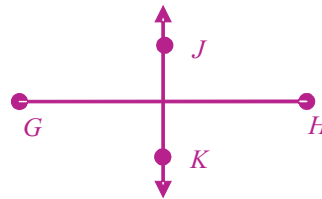
1.

About 10°

2.

About 170°

3.

About 70°

Draw and label the figure described.

4. $\overrightarrow{CD} \parallel \overline{EF}$

D
C
F
E

5. $\overline{GH} \perp \overrightarrow{JK}$

J
G   *H*
K

Use the diagram at right for problems 6 – 9.

6. Name all the right angles.

    ∠AFC and ∠CFE

C
B
D
A   *F*   *E*
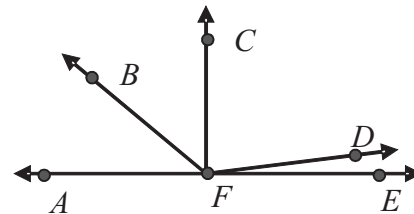
7. Name all the acute angles.

    ∠AFB, ∠BFC, ∠CFD, and ∠DFE

8. Name all the obtuse angles.

    ∠AFD, ∠BFD, and ∠BFE

9. Do any of the acute angles appear congruent? If so, which ones?

    Yes: ∠AFB and ∠BFC

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Use the diagram at right for problems 10 and 11.

10. Name four pairs of parallel line segments.

$\qquad$ **Possible answers:**

$\qquad$ $\overline{DC} \parallel \overline{HG}$, $\overline{BA} \parallel \overline{FE}$, $\overline{CA} \parallel \overline{GE}$, $\overline{DB} \parallel \overline{HF}$
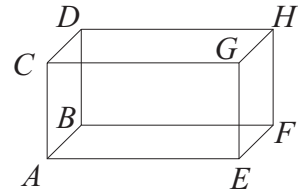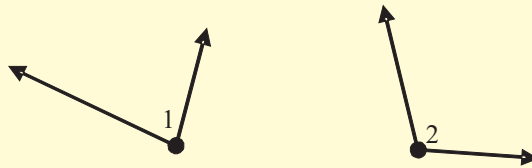
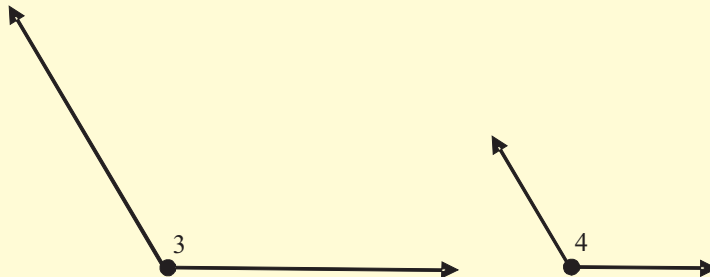**11.** Name two line segments that are perpendicular to $\overline{GE}$.

$\qquad$ **Possible answers:** $\overline{CG}$ and $\overline{AE}$

Journal

1. Explain the difference between parallel and perpendicular lines.

2. One of the angles below is acute, and one of the angles is obtuse. How can you tell, without measuring, which one is acute and which one is obtuse?

1

2

3. Dave said the angles below are not congruent because ∠3 is larger than ∠4. Explain why Dave is incorrect.

3

4

Cumulative Review

Find the value of *x*.

1. $\dfrac{5}{6} = \dfrac{10}{x}$

   12

2. $\dfrac{x}{4} = \dfrac{3}{8}$

   1.5

3. $\dfrac{9}{12} = \dfrac{6}{x}$

   8

4. $\dfrac{5}{x} = \dfrac{5}{2}$

   2

Write all the ways to name each geometric figure using symbols.
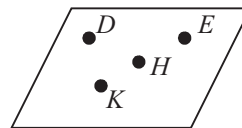
5.

   $\overrightarrow{LT}, \overrightarrow{LF}$

6.

   $\overleftrightarrow{LT}, \overleftrightarrow{TL}, \overleftrightarrow{LF}, \overleftrightarrow{FL}, \overleftrightarrow{TF}, \overleftrightarrow{FT}$

7.   Tell why the plane on the right can be named plane *KDH* but not plane *KHE*.
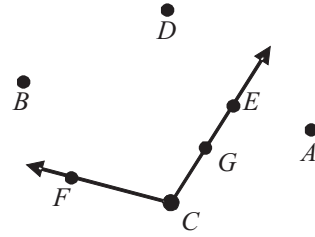
   When naming a plane using three points, the three points must be noncollinear.

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Use the diagram on the right for problem 8 –10.

8. Name the angle in as many ways as possible.

   ∠FCG, ∠FCE, ∠ECF, ∠GCF, ∠C

9. Which points are in the interior of the angle?

   Point *B* and point *D*

10. Name the sides of the angle.

    $\overrightarrow{CF}$ **and** $\overrightarrow{CG}$ $\left(\text{or } \overrightarrow{CE}\,\right)$

Possible Journal Answers

1. **Parallel lines never intersect, even when the lines are extended. Perpendicular lines intersect, and their intersection creates right angles.**

2. **To determine if an angle is greater or less than 90°, add a third ray to make a right angle using one of the rays of the given angle.**
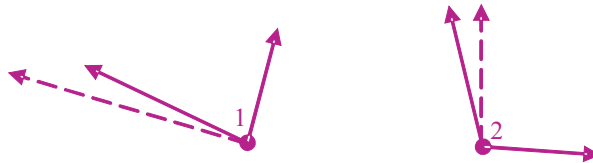
   Compare the given angle to the right angle. In ∠1, the angle is less than the right angle, so it is acute. In ∠2, the angle is greater than the right angle, so it is obtuse.

3. **The sides of ∠3 are drawn longer than the sides of ∠4, but rays extend forever; they just cannot be drawn that way. Both angles have the same degree of openness. They both measure 120°. Also, one can be placed exactly on top of the other.**

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