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Lesson #107 - Vertical and Adjacent Angles

**Do Now**: Classify each of the following angles as acute, obtuse, right, or straight.

1) 2) 3) 4)



\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Angle:** Formed by 2 rays with a common endpoint.

* The common endpoint is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the angle.
* You can name an angle by using the vertex point, by using a number in the angle (if given), or by using one point on each ray with the vertex point in the middle.

**For Example:**  We can name the following angle:

****

**Directions:** Name each of the following angles four ways.

5) 6)

**Directions:** Name both ∠1 and ∠2 in two different ways.

7)

Would it be appropriate to name any of the angles in the diagram ∠E? Why or why not?

**Angle Relationships**

Two angles that have a common side, the same vertex and DO NOT overlap are called **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**



Congruent (≅) angles formed by the intersection of two lines are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They are opposite each other and have congruent (≅) measurements.

**Directions**: In each figure, state the angle relationship.

8) 9)

Relationship: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Relationship: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10) 11)

Relationship: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Relationship: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Directions:** Using your knowledge of angles and their relationships, answer the following questions.

12) Name a right angle. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13) Name an acute angle. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14) Name an obtuse angle. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

15) Name a straight angle. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

16) Name two different pairs of adjacent angles

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17) Name two different pairs of vertical angles

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

18) If the m∡BGA = 35 ̊, find the m∡EGD \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

19) If the m∡AGC = 90 ̊, find the m∡FGD \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

20) If the m∡BGC = 55 ̊, find the m∡FGE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Directions:** Using your knowledge of angles and their relationships, answer the following questions.

21) Name a right angle. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

22) Name an acute angle. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

23) Name an obtuse angle. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

24) Name a straight angle. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

25) Name a pair of adjacent angles. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

26) Name a pair of vertical angles. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

27) If the m∡EAD = 46 ̊, find the m∡BAC \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

28) Are ∡EAF and ∡BAC vertical angles? Explain why or why not.

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**In Your Own Words**

What are adjacent angles? How can we identify them?

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What are vertical angles? How can we identify them?

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