Name:_____Teacher:_____ Date:_____

Planning a Proof Assignment

Answer the multiple choice questions:

1. **If two lines intersect each other, which of the following is true?**

   a. the lines are parallel
   b. the lines intersect at more than one points
   c. the vertical angles are congruent
   d. None

2. **If two lines intersect each other at right angles, the lines are:**

   a. parallel
   b. perpendicular
   c. concurrent
   d. None

3. **If the two angles form a linear pair, the two angles are:**

   a. complementary
   b. supplementary
   c. congruent
   d. None

4. **If a transversal intersects two parallel lines, then the alternate exterior angles are:**

   a. complementary
   b. supplementary
   c. congruent
   d. both b and c

5. **If a transversal intersects two parallel lines, then the corresponding angles are:**

   a. complementary
   b. supplementary
   c. congruent
   d. both b and c

6. **If two angles are complementary to the same angle, then the two angles are:**

   a. complementary
   b. supplementary
   c. congruent
   d. both b and c

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7. If two angles are supplementary to the same angle, then the two angles are:

    a. complementary
    b. supplementary
    c. congruent
    d. both b and c

Write a two-column proof for the statements given below.

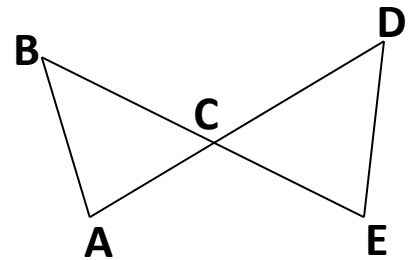**1. If $4x + 5 = 9$, show that $x = 1$**

2. If $2(y - 4) = 16$, then $y = 12$

3. If $x + y = 9$ and $2(x + 1) = 4$, then $y = 8$

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4. If two intersecting lines form congruent adjacent angles, then the lines are perpendicular.

5. Given C is the midpoint of BE and AC ≅ CD, prove that:
$$\Delta ABC \cong \Delta CDE$$

6. If two angles are supplementary to a same angle, then the two angles are congruent.