

- 5. Transitive
- 4. Symmetric
- 3. Subtraction
- 2. Reflexive
- 1. Substitution

GEOMETRY

The Complete Course

Lesson Four

Preparing Logical Reasons For A Two-Column Proof

KA8464

Worksheet

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I. VIDEOTAPE FOLLOW-UP QUESTIONS

I. Introduction.

II. Properties.

A. Properties of equality for real numbers

1. Addition property
2. Subtraction property
3. Multiplication property
4. Division property
5. Substitution property
6. Reflexive property
7. Symmetric property
8. Transitive property

B. Properties of congruence for line segments and angles

1. Reflexive property
2. Symmetric property
3. Transitive property

III. Postulates for points, lines and planes.

- A. A line contains at least two points. A plane contains at least three non-collinear points. Space contains at least four noncoplanar points. (P4-1)
- B. If two distinct points are given, then a unique line contains them. (P4-2)
- C. Through any three points there is at least one plane, and through any three non-collinear points there is exactly one plane. (P4-3)
- D. If two points are in a plane, then the line that contains those points lies entirely in the plane. (P4-4)
- E. If two distinct planes intersect, then their intersection is a line. (P4-5)

IV. Theorems related to points, lines and planes.

- A. If two distinct lines intersect, then they intersect in exactly one point. (T4-1)
- B. If there is a line and a point not in the line, then there is exactly one plane that contains them. (T4-2)
- C. If two distinct lines intersect then they lie in exactly one plane. (T4-3)
- D. If a line intersects a plane, but is not contained in the plane, then the intersection is exactly one point. (T4-4)

II. SUPPLEMENTARY EXERCISES

1-5 Justify each of the following statements with a property of equality or congruence.

1. If $\angle A \cong \angle M$ and $\angle K \cong \angle M$, then $\angle A \cong \angle K$

2. $\overline{CD} \cong \overline{CD}$

3. If $m\angle 1 + m\angle 3 = m\angle 2 + m\angle 3$, then $m\angle 1 = m\angle 2$

4. If $m\angle A = 3x$, then $3x = m\angle A$.

5. If $\overline{AB} \cong \overline{MN}$ and $\overline{MN} \cong \overline{XY}$, then $\overline{AB} \cong \overline{XY}$.