

HW #5

Geometry/Trig
Section 2.2 - Introduction to Proofs

Name: _____
Date: _____ Block: _____

Justify each statement with a property or postulate.

1.) If $6x - 7 = 29$, then $6x = 36$ Addition Prop.

2.) If $6x = 36$, then $x = 6$ Division Prop.

3.) If $x/9 = 2$, then $x = 18$ Multiplication Prop.

4.) If $3x + 5 = -22$, then $3x = -27$ Subtraction Prop.

5.) If $3x = -27$, then $x = -9$ Division Prop.

6.) $3(x+y) = 3x+3y$ Distributive Prop.

7.) If $m\angle A = m\angle B$ and $m\angle B = m\angle C$, then $m\angle A = m\angle C$ Transitive Prop.

8.) If $2(x+1) = 8$ then $8 = 2(x+1)$ Symmetric Prop.

9.) If $AB = CD$, then $AB + BC = BC + CD$ Addition Prop.

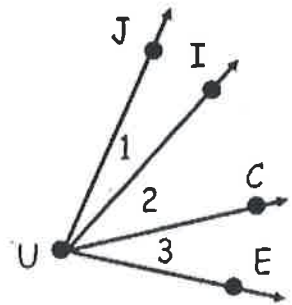


10.) If $AB = BC$ and $BC = CD$, then $AB = CD$ Transitive Prop.

11.) If $AB + BC = BC + CD$, then $AB = CD$ Subtraction Prop.

12.) If $m\angle CUE = m\angle JUI$, then $m\angle JUI = m\angle CUE$ Symmetric Prop.

13.) $m\angle 1 + m\angle 2 = m\angle JUC$ Angle Addition Postulate

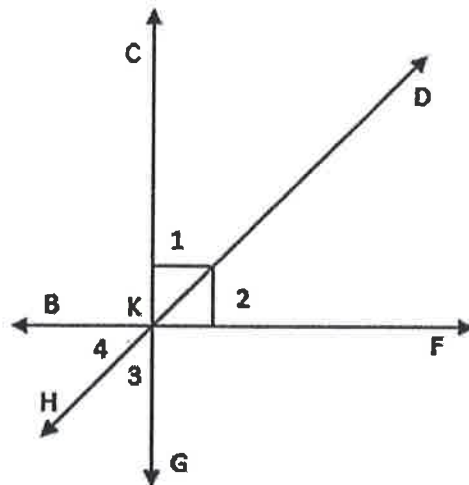


14.) $AC + CE = AE$ Segment Addition Postulate

Provide a justification (definition, property, postulate, or theorem) for each statement. (1/3 point each).
NO ABBREVIATIONS!!

Example:

Distributive Property If $3(x + 2) = 7$, then $3x + 6 = 7$.



Refer to the diagram for #1-8.

- Segment Addition Postulate 1) $BK + KF = BF$
- Angle Addition Postulate 2) $m\angle 1 + m\angle 2 = m\angle CKF$
- Definition of Complementary Angles 3) If $\angle 1$ and $\angle 2$ are complementary angles, then $m\angle 1 + m\angle 2 = 90$.
- Vertical Angle Theorem 4) $\angle 1 \cong \angle 3$
- Definition of a right Angle 5) If $\angle CKB$ is a right angle, then $m\angle CKB = 90$.
- Angle Addition Postulate (or Linear Pair) 6) $m\angle 4 + m\angle HKF = 180$
- Definition of Supplementary Angles 7) If $\angle 2$ and $\angle HKF$ are supplementary, then $m\angle 2 + m\angle HKF = 180$.
- Definition of Straight Angle 8) If $m\angle BKF = 180$, then $\angle BKF$ is a straight angle.

Subtraction Prop. 9) If $5x + 7 = 10$, then $5x = 3$.

Division Prop. 10) If $5x = 3$, then $x = 3/5$.

Addition Prop. 11) If $AB = BC$, then $AB + BD = BC + BD$.

Reflexive Prop. 12) $m\angle 5 = m\angle 5$.

Transitive Prop 13) If $AB = BC$ and $BC = CD$, then $AB = CD$.

Substitution Prop. 14) If $5x + 2y = 11$ and $y = 4$, then $5x + 8 = 11$.

Multiplication Prop. 15) If $\frac{1}{2}x = 9$, then $x = 18$.