

#1-5, Name the correct postulate/property/theorem demonstrated.

- If  $\angle ABC$  is right, then  $m\angle ABC = 90$ . *Definition right*
- $m\angle ABC = m\angle ABC$ . *reflexive*
- If Y is between X and Z, then  $ZY + YX = XZ$ . *Segment Addition*
- If  $x = y - 1$  and  $y - 1 = 6$ , then  $x = 6$ . *Substitution or Transitive*
- If H is the midpoint of  $\overline{AB}$ , then  $\overline{AH} \cong \overline{HB}$ . *Def. of midpoint*



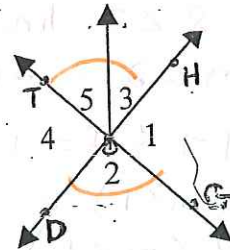
#6-10, Write the statement that might follow in a proof using the given info and the property listed.

- If  $m\angle X = 120$ , and  $m\angle X = m\angle A + m\angle B$ , then  $120 = \angle A + \angle B$  (Substitution Prop.)
- If  $\frac{1}{2}(YZ) = BV$ , then  $YZ = 2BV$  (Multiplication Prop. =) *or any #*
- If  $t = h$  &  $h = p$ , then  $t = p$  (Transitive Prop.)
- If  $x = y + 3$  and  $x = p + 1$ , then  $y + 3 = p + 1$  (Substitution Prop.)
- If  $AC - BG = NH - BG$ , then  $AC = NH$  (Addition Prop. =)

11. Fill in the correct justifications for each step of proof.

Given:  $m\angle 3 = 45$ ,  $m\angle 5 = 45$

Prove:  $\angle 2$  is right



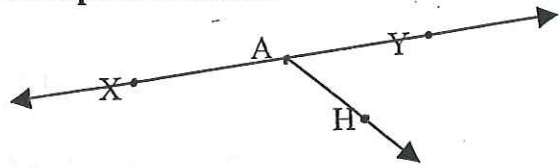
Statements	Reasons
1. $m\angle 3 = 45^\circ$	1. Given
2. $m\angle 5 = 45^\circ$	2. Given
3. $\angle 3 + \angle 5 = \angle HOT$	3. Angle Addition (from diagram)
4. $\angle HOT = \angle 2$	4. Vertical $\angle$
5. $\angle 3 + \angle 5 = \angle 2$	5. Substitution (3, 4) or Transitive
6. $45 + 45 = m\angle 2$	6. Sub (1, 2, 5)
7. $90 = m\angle 2$	7. Simplify
8. $\angle 2$ is a right angle	8. def. right

#12-14, Write your own proof. The approximate number of steps is indicated.

12. Given:  $\angle XAY$  is a straight angle.

$$m\angle YAH = 50^\circ$$

Prove:  $m\angle XAH = 130^\circ$



Statements	Reasons
1. $\angle XAY$ is straight	1. given
2. $\angle YAH = 50$	2. given
3. $\angle XAH + \angle YAH = \angle XAY$	3. $\angle +$
4. $\angle XAY = 180$	4. straight angle def.
5. $\angle XAH + 50 = 180$	5. Sub (2, 3, 4)
6. $\angle XAH = 130$	6. -

13. Given:  $\angle 1$  and  $\angle 2$  form a linear pair.

$$m\angle 2 = 2(m\angle 1)$$

Prove:  $m\angle 1 = 60$

Proof:

Statements	Reasons
a. $\angle 1$ & $\angle 2$ linear pair	a. given
b. $m\angle 2 = 2(m\angle 1)$	b. given
c. $\angle 1 + \angle 2 = 180$	c. def. linear pair
d. $2(m\angle 1) + \angle 1 = 180$	d. Sub (b, c)
e. $3(m\angle 1) = 180$	e. simplify
f. $m\angle 1 = 60$	f. $\div$

14. Given: B is midpt of  $\overline{AC}$ , C is midpt. of  $\overline{BD}$

Prove:  $AB \cong CD$



Statements	Reasons
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.