Key

Geometry Unit 3 Day 10 Proofs

Questions to ask when writing a proof.

1. What is the same?
2. Is there a key word? Between, midpoint, bisector, or perpendicular
3. Do I need a diagram?
4. What can I take from the diagram?

Between

Midpoint

Bisector

Perpendicular

Things you can use from a drawing:

A. reflexive property
B. Segment Addition
C. Angle Addition
D. Vertical Angles
E. Labeled parts (right <)
F. Linear Pairs

Write a two column proof for each.

1.

Given: A is between C and T
$CA = XY$

Prove: $CT = XY + AT$

1.)

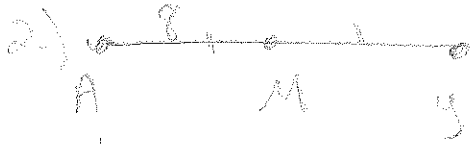
statements	reasons
1.) A is between C & T CA = XY	1.) given
2.) CA + AT = CT	2.) segment addition postulate
3.) XY + AT = CT	3.) substitution
4.) CT = XY + AT	4.) symmetric

2.

Given: M is the midpoint of $\overline{AY}$
$AM = 8$

Prove: $MY = 8$

2.)



statements	reasons
1.) M is the midpoint of $\overline{AY}$ AM = 8	1.) given
2.) AM = MY	2.) def. of midpoint
3.) 8 = MY	3.) substitution
4.) MY = 8	4.) symmetric

3.

2. Given: *O is between S and N*
N is the midpoint of $\overline{OG}$
$NG = 5$
Prove: $SN = SO + 5$

3.

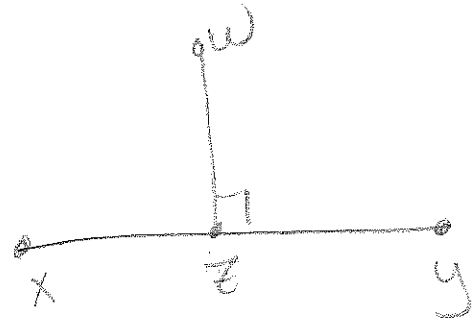
statements	reasons
1.) O is between S & N; N is the midpoint of $\overline{OG}$; NG = 5	1.) given
2.) ON = NG	2.) def. of midpoint
3.) ON = 5	3.) substitution
4.) SN = SO + ON	4. Seg. add. post.
5.) SN = SO + 5	5. Substitution

4.

2. Given: $\overrightarrow{TR}$ *bisects* $\angle ATS$
Prove: $m\angle CTR = m\angle 1 + m\angle 3$

SKIP

5.



Given: $XY \perp WZ$

Prove: $< WZX = < WZY$

statements	reasons
1.) $XY \perp WZ$	1.) given
2.) $\angle WZX$ and $\angle WZY$ are right $\angle$s	2.) def. of $\perp$
3.) $m\angle WZX = 90°$, $m\angle WZY = 90°$	3.) def. of $\cong$
4.) $\angle WZX = \angle WZY$	4. substitution

6. Given: $\angle A$ *and* $\angle B$ *are Complementary.*
$\angle A$ *and* $\angle K$ *are Complementary.*
Prove: $\angle B \cong \angle K$

6.)

statements	reasons
1.) $\angle A + \angle B$ are comp; $\angle A + \angle K$ are comp	1.) given
2.) $\angle A + \angle B = 90$, $\angle A + \angle K = 90$	2.) def. of comp. $\angle$s
3.) $\angle A + \angle B = \angle A + \angle K$	3.) substitution
4.) $\angle B = \angle K$	4.) subtraction Prop.
5.) $\angle B \cong \angle K$	5.) def. of $\cong$