Geometry HW Section 13.1 Due 4/21

1. What is the difference between a postulate and a theorem?

4. When you state $AC = AC$, what property are you using? When you state $\overline{AC} \cong \overline{AC}$, what property are you using?

5. Name the property that supports this statement: If $\angle ACE \cong \angle BDF$ and $\angle BDF \cong \angle HKM$, then $\angle ACE \cong \angle HKM$.

6. Name the property that supports this statement: If $x + 120 = 180$, then $x = 60$.

In Exercises 10−17, identify each statement as true or false. Then state which definition, property of algebra, property of congruence, or postulate supports your answer. Draw a figure to visualize it better if you need.
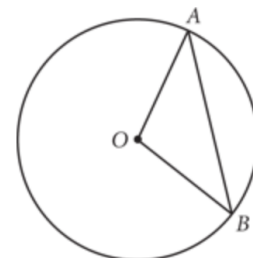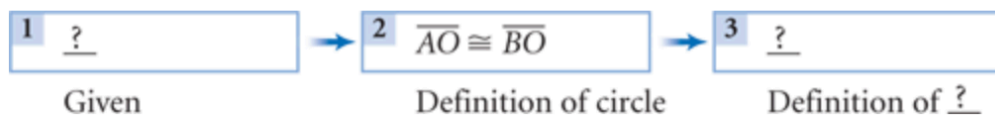
10. If M is the midpoint of $\overline{AB}$, then $AM = BM$.

11. If M is the midpoint of $\overline{CD}$ and N is the midpoint of $\overline{CD}$, then M and N are the same point.

12. If $\overrightarrow{AB}$ bisects $\angle CAD$, then $\angle CAB \cong \angle DAB$.

13. If $\overrightarrow{AB}$ bisects $\angle CAD$ and $\overrightarrow{AF}$ bisects $\angle CAD$, then $\overrightarrow{AB}$ and $\overrightarrow{AF}$ are the same ray.

14. Lines ℓ and m can intersect at different points A and B.

15. If line ℓ passes through points A and B and line m passes through points A and B, lines ℓ and m do not have to be the same line.

16. If point P is in the interior of $\angle RAT$, then $m\angle RAP + m\angle PAT = m\angle RAT$.

17. If point M is on $\overline{AC}$ and between points A and C, then $AM + MC = AC$.

18.
Copy and complete this flowchart proof. For each reason, state the definition, the property of algebra, or the property of congruence that supports the statement.

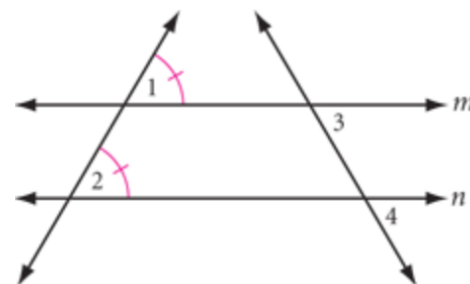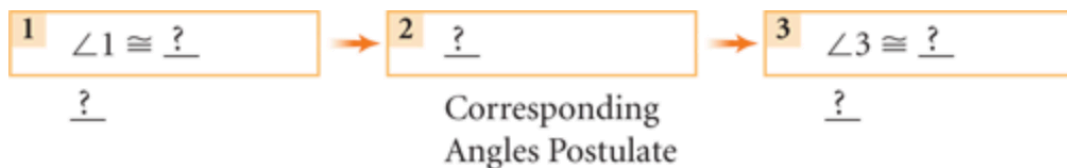**Given:** $\overline{AO}$ and $\overline{BO}$ are radii

Show: $\triangle AOB$ is isosceles

1 ?	2 $\overline{AO} \cong \overline{BO}$	3 ?
Given	Definition of circle	Definition of ?

19.
Given: $\angle 1 \cong \angle 2$

Show: $\angle 3 \cong \angle 4$

1 $\angle 1 \cong$?	2 ?	3 $\angle 3 \cong$?
?	Corresponding Angles Postulate	?

20.

. **Given:** $\overline{AC} \cong \overline{BD}, \overline{AD} \cong \overline{BC}$

Show: $\angle D \cong \angle C$
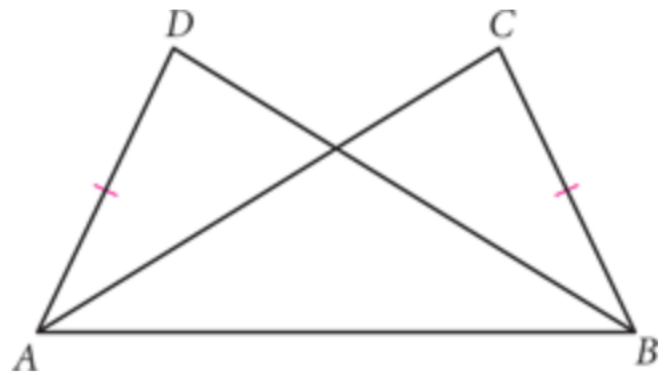
1	$\overline{AC} \cong \overline{BD}$

?

2	?

?

?

3	$\overline{AB} \cong \overline{BA}$

Reflexive property
of congruence

4	$\triangle ABC \cong$?

?

5	?

CPCTC

21.

Given: Isosceles triangle ABC with $\overline{AB} \cong \overline{BC}$

Show: $\angle A \cong \angle C$
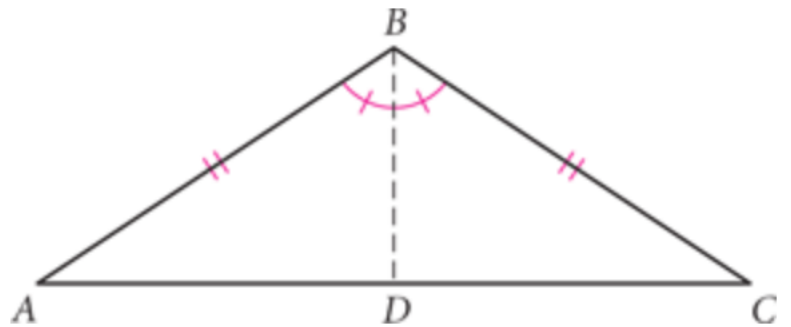
2	?

Given

1	Construct angle bisector $\overline{BD}$

Angle Bisector
Postulate

3	$\angle ABD \cong$?

Definition
of ?

4	$\overline{BD} \cong \overline{BD}$

?

5	$\triangle BAD \cong$?

?

6	?

?