Name_____ Block_____

Chapter 2 Review

1) If $m\angle 1 = m\angle 2,$ then $\angle 1 \cong \angle 2$ Write the converse.

2) If the converse is true, write 1) as a biconditional. If false, give a counterexample.

3) Give a counterexanple (use words or a drawing)
If $\overline{AB} \cong \overline{BC},$ then B is the midpoint of $\overline{AC}$

4) Give a counterexample. If $x^2 = 25,$ then $x = 5$

5) Write the definition of complementary angles as a biconditional.

6) Write the definition of perpendicular as a biconditional.

State the property, postulate, definition, or theorem

7) $\angle P \cong \angle P$

8) $2x + y = 70$ and $y = 3x,$ then $2x + 3x = 70$

9) If $x = -7$ and $-7 = y$, then $x = y$

10) If E is the midpoint of $\overline{AF}$, then $\overline{AE} \cong \overline{EF}$

11) If $\angle BEC \cong \angle CEF$, then $\overleftrightarrow{EC}$ is the bisector of $\angle BEF$

12) If M is the midpoint of $\overline{AB}$, then $AM = \frac{1}{2} AB$

13) If $\angle 1 \cong \angle 4$ and $\angle 2 \cong \angle 4,$ then $\angle 1 \cong \angle 2$

14) $BD + DC = BC$

15) $\overline{RT} \perp \overline{TV},$ then $\angle RTV$ is a right angle

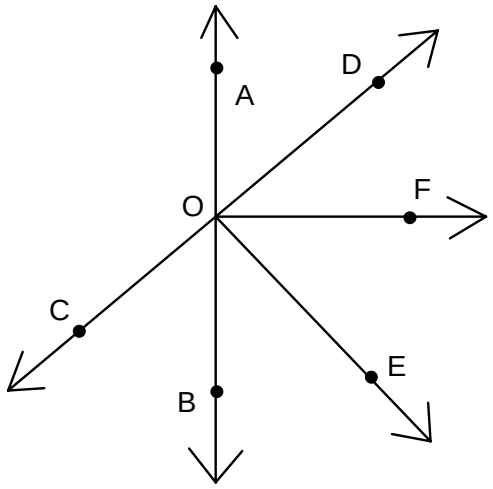
16) If $\overrightarrow{OE}$ is a bisector of $\angle AOB$, then $m\angle AOE = \frac{1}{2} m\angle AOB$

17) If $m\angle 1 + m\angle 2 = 90$, then the angles are complementary.

18) Vertical angles are congruent.

19) If two angles are supplementary, then the sum of their measures is 180°.

Given $\vec{OF} \perp \vec{AB}$
Justify the following Statements.



20) $\angle AOF$ is a right angle

21) $\angle BOE$ and $\angle EOF$ are complementary

22) $m\angle BOF = 90^\circ$

23) If $\angle AOD$ is complementary to $\angle DOF$ and $\angle FOE$ is complementary to $\angle DOF$, then $\angle AOD \cong \angle FOE$

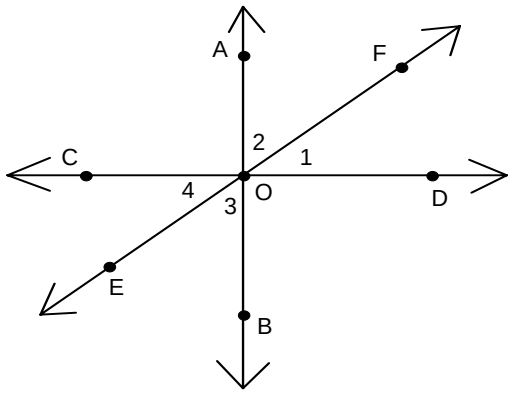
24) $\angle COB \cong \angle DOA$

25) If $\angle COE \cong \angle DOE$, then $\vec{OE} \perp \vec{CD}$

26) If $\angle DOB$ is supplementary to $\angle COB$ and $\angle COA$ is supplementary to $\angle AOD$, then $\angle DOB \cong \angle COA$

27) If $\angle BOE$ is then complement of $\angle EOF$, then $m\angle BOF = 90^\circ$

Given: $\vec{AB} \perp \vec{CD}$



28) $m\angle AOC =$ _____

29) $m\angle 3 = 55^\circ, m\angle 4 =$ _____

30) $m\angle 3 = 55^\circ, m\angle 2 =$ _____

31) $m\angle EOF =$ _____

32) $m\angle 1 = 18^\circ, m\angle BOF =$ _____

33) $m\angle 4 = 18^\circ, m\angle COF =$ _____

Find x

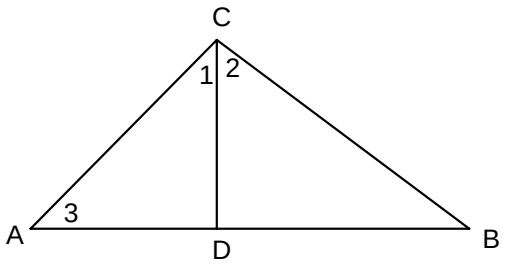
34) $m\angle 3 = 7x - 15, m\angle 2 = 4x$

35) $m\angle 1 = x + 16, m\angle 2 = 4x - 1$

36) $m\angle 4 = 2x, m\angle COF = x - 45$

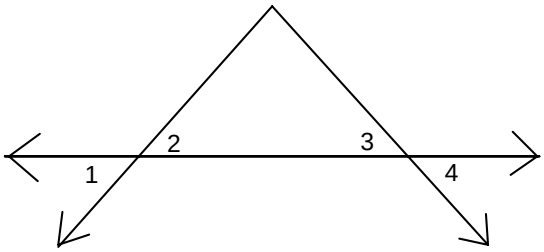
37) Given: $\overline{AC} \perp \overline{BC}$
$\angle 3$ is comp. to $\angle 1$

Prove: $\angle 3 \cong \angle 2$



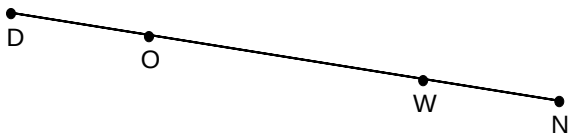
1) $\overline{AC} \perp \overline{BC}$	
2) $\angle 1$ comp. to $\angle 2$	
3) $\angle 3$ comp. to $\angle 1$	
4) $\angle 3 \cong \angle 2$	

38) Given: $\angle 2 \cong \angle 3$
Prove: $\angle 1 \cong \angle 4$



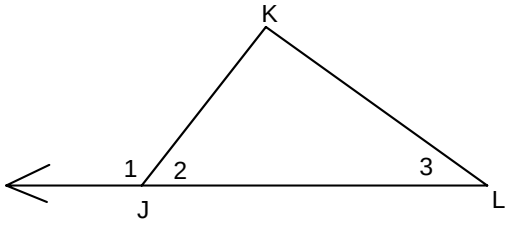
1)	1) Given
2) $\angle 1 \cong \angle 2$ and $\angle 3 \cong \angle 4$	2)
3)	3) Substitution

39) Given: $DW = ON$
Prove: $DO = WN$



1) $DW = ON$	1)
2) $DW = DO + OW$ and $ON =$ _____	2)
3) _____	3) Substitution
4) $OW = OW$	4)
5) $DO = WN$	5)

40) Given: $m\angle 1 + m\angle 3 = 180$
Prove: $\angle 3 \cong \angle 2$



1) $m\angle 1 + m\angle 3 = 180$	1)
2) $m\angle 1 + m\angle 2 = 180$	2)
3) $m\angle 1 + m\angle 3 = m\angle 1 + m\angle 2$	3)
4) $m\angle 1 = m\angle 1$	4)
5) $m\angle 3 = m\angle 2$	5)
6) $\angle 3 \cong \angle 2$	6)