Math 5
Quiz

Name (Print): _____

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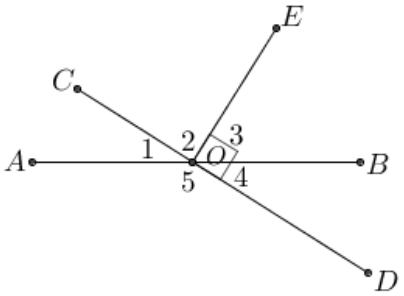
1. State the relationship between the angles. Are they vertical? complementary adjacent? adjacent? supplementary adjacent? complementary?



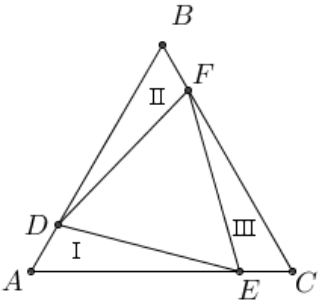
   (a) $\angle 1$ and $\angle 4$_____
   (b) $\angle 3$ and $\angle 4$_____
   (c) $\angle 1$ and $\angle 2$_____
   (d) $\angle 4$ and $\angle 5$_____
   (e) $\angle 1$ and $\angle 3$_____
   (f) $\angle COB$ and $\angle 5$_____

2. Complete each statement, and state the postulate that applies.
   (a) If Jack and Jill earn the same amount of money each hour and their rate of pay is increased by the same amount, then_____because_____
   (b) In the past year, those mandolins have tripled in value. If they had the same value last year, then_____by_____
   (c) A week ago, there were two classes that had the same enrollment. If the same number of students were dropped in each, then_____by_____.
   (d) Since 100°C and 212°F are the boiling temperatures of water, then _____ by _____.
   (e) If two ropes have the same length and each is cut into five equal parts, then_____ by_____
   (f) Since he has \$2000 in Bank A, \$3000 in Bank B and \$5000 in Bank C, then_____ by_____
   (g) If three quarters and four nickels are compared with three quarters and two dimes then_____ by_____

3. Prove each of the following.
   (a) Straight angles are congruent.
   (b) Complements of congruent angles are congruent.
   (c) Vertical angles are congruent.

4. In each part of the figure, $\triangle I, \triangle II$, and $\triangle III$ can be proved congruent. Make a diagram showing the congruent parts and state the reason for congruency.

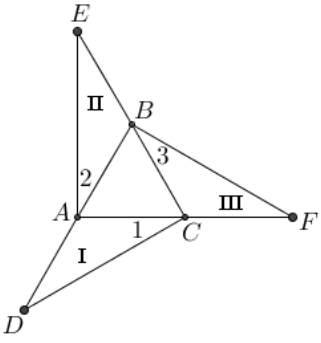
(a)



plan: Think backwards.

Given:
$\triangle ABC$ equilateral
$\overline{AD} \cong \overline{BF} \cong \overline{CE}$

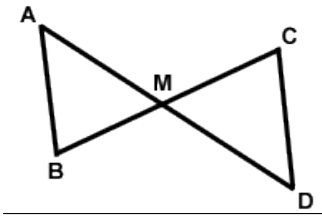
Prove:
$\triangle I \cong \triangle II \cong \triangle III$



Given:
$\triangle ABC$ equilateral
$\overline{AF}, \overline{BD}, \overline{CE}$ are extensions of the sides of $\triangle ABC$
$\angle 1 \cong \angle 2 \cong \angle 3$

Prove:
$\triangle I \cong \triangle II \cong \triangle III$

5.



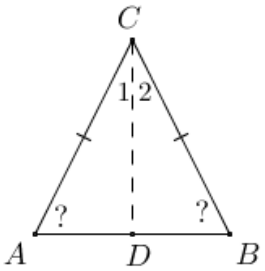
Given:
Segment $\overline{AD}$ bisects segment $\overline{BC}$.
Segment $\overline{BC}$ bisects segment $\overline{AD}$.

Prove:

$\triangle ABM$ and $\triangle DCM$ are congruent.

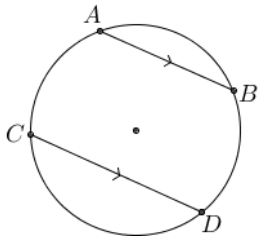
Statement	Reason
1. Segment AD bisects segment BC.	1. Given.
2. Segments AM and MD are congruent.	2. _____
3. Segment BC bisects segment AD.	3. _____
4. _____	4. When a segment is bisected, the two resulting segments are congruent..
5. $\angle AMB$ and $\angle DMC$ are congruent.	5. Verticle angles are congruent.
6. _____	6. _____.

6. **Given**:
$\triangle ABC$ with $\overline{AC} \cong \overline{BC}$.
Prove:
$\angle A \cong \angle B$



Statement	Reason
1. Draw $\overline{CD}$ bisecting $\angle C$.	1. Postulate: _____
2. _____	2. To bisect is to divide into two $\cong$ parts.
3. $\overline{AC} \cong \overline{BC}$	3. Given.
4. $\overline{CD} \cong \overline{CD}$.	4. _____
5. $\triangle ACD \cong \triangle BCD$.	5. _____
6. $\angle A \cong \angle B$.	6. _____

7. **Given**:
⓪ with chords $\overline{AB} \| \overline{CD}$.
Prove:
$\overset{\frown}{AC} \cong \overset{\frown}{BD}$

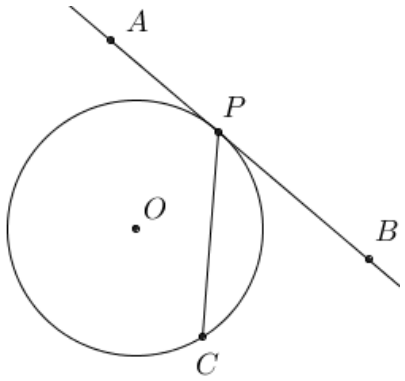


Statement	Reason
1. _____	1. Given.
2. Draw chord $\overline{BC}$.	2. _____.
3. $\angle ABC \cong \angle BCD$	3. Trans. $\overline{BC}$ cuts $\overleftrightarrow{AB} \| \overline{CD}$, alt. int. $\angle$s are $\cong$.
4. _____	4. Arcs are $\cong$ $\Leftrightarrow$ corresponding chords are $\cong$.

QED

8.

Given:
⓪ with tangent $\overleftrightarrow{AB}$ at P.
Chord $\overline{PC}$
Prove:
$\angle BPC = \frac{1}{2}\overset{\frown}{PC}$



Statement	Reason
1. Draw chord $\overline{CD}$ parallel to $\overleftrightarrow{AB}$.	1. _____.
2. _____	2. Parallel lines cut off $\cong$ arcs in a circle.
3. $\overline{DP} = \overline{CP}$	3. Arcs are $\cong$ $\Leftrightarrow$ corresponding chords are $\cong$.
4. $\angle PDC = \frac{1}{2}\overset{\frown}{PC}$	4. _____.
5. $\angle PDC \cong \angle PCD$.	5. _____.
6. _____.	6. Trans. $\overline{PC}$ cuts $\overleftrightarrow{AB} \| \overline{DC}$, alt. int. $\angle$s are $\cong$
7. $\angle BPC = \frac{1}{2}\overset{\frown}{PC}$.	7. _____.

QED