Sec 6.1C

Unit 6 Standards Quiz #1 Review Name:_____ Hr:____

Standard: Students will be able to prove algebraic calculations

1. Order the statements correctly. Then choose the reasons for each statement from the choices below.
   Given: $2x + 3 = 5x - 6$
   Prove: $x = 3$

Statements:	Reasons (Justification):
1) $2x+3=5x-6$	a) Given
2) $-3x+3=-6$	b) Subtraction
3) $-3x=-9$	c) Subtraction
4) $x=3$	d) Division
5)	e)

Statements:	Reasons:
• $3 = x$ • $2x + 3 = 5x - 6$ • $9 = 3x$ • $x = 3$ • $3 = 3x - 6$	• Subtraction Property of Equality • Given • Addition Property of Equality • Subtraction Property of Equality • Division Property of Equality • Substitution Property • Symmetric Property • Reflexive Property

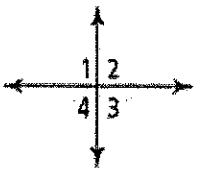
2. Write a complete proof.
   Given: $3x - 5 = 10$
   Prove: $x = 5$

Statements:	Reasons (Justification):
(1) $3x-5=10$	(1) Given
(2) $3x=15$	(2) Addition
(3) $x=5$	(3) Division

(Hint: Work out the problem first, use the steps as statements)

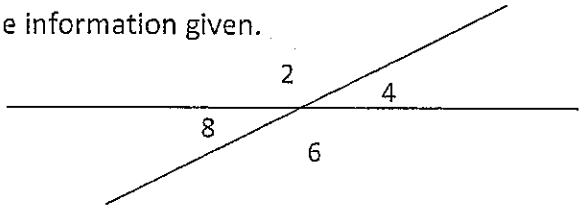
Standard: Students will be able to prove statements about angles.

3. Fill in the blanks on the following proof.
   Given: $\angle 1 \cong \angle 2$
   Prove: $\angle 4 \cong \angle 3$



Statements:	Reasons:
1) $\angle 1 \cong \angle 2$	a) Given
2) $\angle 4 \cong \angle 2$	b) Vertical angles are $\cong$
3) $\angle 1 \cong \angle 4$	c) Transitive Property of Congruence
4) $\angle 1 \cong \angle 3$	d) Vertical angle
5) $\angle 4 \cong \angle 3$	e) Transitive

4. Write a complete proof using the information given.
   Given: $\angle 2 \cong 140°$
   Prove: $\angle 8 \cong 40°$



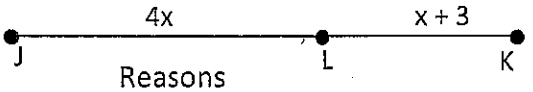
Statements:	Reasons:
(1) $\angle 2 \cong 140$	(1) Given
(2) $\angle 2 + \angle 8 = 180°$	(2) Definition of a linear pair
(3) $140° + \angle 8 = 180°$	(3) Substitution prop. =
(4) $\angle 8 = 40°$	(4) Subtraction prop. of =

Standard: Students will be able to prove statements about lines (segments)

5. Complete the proof by filling in the spaces below.

Given: JK = 48

Prove: x = 9



Statements	Reasons
1) JK = 48	a) Given
2) JL + LK = JK	b) Segment addition postulate
3) 4x + x + 3 = JK	c) Substitution Property
4) 5x + 3 = 48	d) ~~Distributive Property~~ Substitution
5) 5x = 45	e) Subtraction
6) x = 9	f) Division

6. Use the statements and reasons given at the bottom to write a complete proof of the following:

Given: C *is the midpoint of* $\overline{AD}$.

Prove: $x = 4$

Statements:	Reasons:
(1) C is the midpoint of AD	(1) Given
(2) $\overline{AC} \cong \overline{CD}$	(2) Definition of a midpoint
(3) $m\overline{AC} = m\overline{CD}$	(3) Congruent segments have equal length
(4) $3x + 8 = 5x$	(4) Substitution
(5) $8 = 2x$	(5) Subtraction
(6) $x = 4$	(6) Division

Statements:

- ~~$2x = 12$~~ 8
- ~~$mAC = mCD$~~
- ~~$5x = 3x + 8$~~
- ~~$\overline{AC} \cong \overline{CD}$~~
- $x = 4$
- ~~C *is the midpoint of* $\overline{AD}$~~

Reasons:

- ~~Congruent segments have equal legth~~
- Subtraction Property of Equality
- ~~Given~~
- ~~Definition of midpoint~~
- Division Property of Equality
- ~~Substitution Property~~