

Name: Key

Date: _____

Hour: _____

GEOMETRY 2.5-2.7 Review

2.5: Reason Using Properties from Algebra

Solve the equation. Write a reason for each step.

1) $-9x - 21 = -20x - 87$

2) $3(2x + 9) = 30$

Statements	Reasons
$-9x - 21 = -20x - 87$	given
$-9x = -20x - 66$	Addition
$11x = -66$	Addition
$x = -6$	Division

Statements	Reasons
$3(2x + 9) = 30$	given
$6x + 27 = 30$	Distributive
$6x = 3$	Subtraction
$x = \frac{1}{2}$	Division

3) $15x + 22 = 7x + 62$

4) $5x + 2(2x - 23) = -154$

Statements	Reasons
$15x + 22 = 7x + 62$	given
$15x = 7x + 40$	Subtraction
$8x = 40$	Subtraction
$x = 5$	Division

Statements	Reasons
$5x + 2(2x - 23) = -154$	given
$5x + 4x - 46 = -154$	Distributive
$9x - 46 = -154$	combine like terms
$9x = -108$	Addition
$x = -12$	Division

2.6: Prove Statements about Segments and Angles

Name the property illustrated by the statement.

5) If $\angle DEF \cong \angle JKL$, then $\angle JKL \cong \angle DEF$

Symmetric prop of \cong

6) $\angle C \cong \angle C$

reflexive prop of \cong

7) If $MN = PQ$ and $PQ = RS$ then $MN = RS$

transitive prop of =

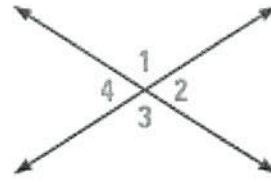
2.7: Prove Angle Pair Relationships

8) If $m\angle 1 = 114^\circ$, find $m\angle 2$, $m\angle 3$ and $m\angle 4$

$$m\angle 3 = 114^\circ \quad m\angle 2 = m\angle 4 = 66^\circ$$

9) If $m\angle 4 = 57^\circ$, find $m\angle 1$, $m\angle 2$ and $m\angle 3$

$$m\angle 2 = 57^\circ, \quad m\angle 1 = m\angle 3 = 123^\circ$$



10) **Given:** $\angle 3$ and $\angle 2$ are complementary

$$m\angle 1 + m\angle 2 = 90^\circ$$

Prove: $\angle 3 \cong \angle 1$

Statements

Reasons

- $\angle 3$ and $\angle 2$ are complementary
 $m\angle 1 + m\angle 2 = 90^\circ$
- $m\angle 3 + m\angle 2 = 90^\circ$
- $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 2$
- $m\angle 1 = m\angle 3$
- $\angle 1 \cong \angle 3$

- given
- Def of complementary
- transitive Prop of =
- Subtraction
- Def of \cong angles