

Name: _____

KEY

Date: _____

Block: _____

GEOMETRY – Semester Review Chapter 2

1. Write the converse, inverse, and contrapositive. Determine which one will always be true.

 $p \rightarrow q$ Conditional: "If you live in Oklahoma, then you live in the United States." $q \rightarrow p$ Converse: If you live in US, then you live in OK $\sim p \rightarrow \sim q$ Inverse: If you don't live in OK, then you don't live in US. $\sim q \rightarrow \sim p$ Contrapositive: If you don't live in US, then you don't live in OK.

2. Use the true statements below to determine whether each conclusion is true or false.

"Sue is a member of the swim team. When the team practices, Sue swims. The team begins practice when the pool opens. The pool opens at 8 AM on weekdays and at noon on Saturdays."

a. The swim team practices on weekdays only. Fb. Sue swims on Saturdays. Tc. Swim team practice starts at the same time every day. F

3. Which conclusion is valid for the situation below?

If two angles are complementary, then the sum of their measures is 90° . $\angle A$ and $\angle B$ are complementary.

a. $m\angle A = 90^\circ$

b. $m\angle A = 90^\circ + m\angle B$

c. $m\angle A = 90^\circ - m\angle B$

d. $\angle A$ is a right angle.

4. Solve each equation. Write a justification for each step.

a. $\frac{m}{-5} + 3 = -4.5$

$$\begin{array}{r} -3 \quad -3 \quad \text{Subtraction POE} \\ \hline \frac{m}{-5} = -7.5 \quad \text{Simp.} \end{array}$$

$$\frac{m}{-5} = -7.5 \quad \text{Simp.}$$

$$m = 36.5 \quad \text{mult. POE}$$

b. $-47 = 3x - 59$

$$\begin{array}{r} +59 \quad +59 \quad \text{Add POE} \\ \hline \frac{12}{3} = \frac{3x}{3} \quad \text{Simp.} \end{array}$$

$$\frac{12}{3} = \frac{3x}{3} \quad \text{Div. POE}$$

$$4 = x \quad \text{Simplify}$$

5. Find the perimeter of the square.

Area = 121 ft^2

$$A = s^2$$
$$\sqrt{121} = \sqrt{s^2}$$

$$11 = s$$

$$P = 4(11) = 44 \text{ ft}$$

6. Find the perimeter of the square.

Area = 49 m^2

$$A = s^2$$

$$49 = s^2$$

$$\sqrt{49} = \sqrt{s^2}$$

$$7 = s$$

$$P = 4(7) = 28 \text{ ft}$$

7. Identify the property that justifies each statement.

- L a. $25 = 25$
B b. If $\angle RST \cong \angle ABC$, then $\angle ABC \cong \angle RST$
J c. $2x = 9$, and $y = 9$, so $2x = y$.
C d. $\angle XYZ \cong \angle XYZ$
G e. If $x = y$, then $x + 5 = y + 5$
E f. If $x = y$, then $2x = 2y$.
H g. $3(x + y) = 3x + 3y$
K h. If $x = y$, then $y = x$.
D i. If $x = y$, then $\frac{x}{w} = \frac{y}{w}$.
F j. If $x = y$, then $x - 7 = y - 7$

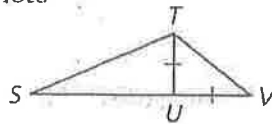
- A. Transitive Property of Congruence
 B. Symmetric Property of Congruence
 C. Reflexive Property of Congruence
 D. Division Property of Equality
 E. Mult. Property of Equality
 F. Subtraction Property of Equality
 G. Addition Property of Equality
 H. Distributive Property
 I. Substitution Property of Equality
 J. Transitive Property of Equality
 K. Symmetric Property of Equality
 L. Reflexive Property of Equality

8. Fill in the blanks to complete the two-column proof.

Given: $\overline{TU} \cong \overline{UV}$

Prove: $SU + TU = SV$

Two-column proof:



Statements	Reasons
1. $\overline{TU} \cong \overline{UV}$	1. a. ?
2. b. ?	2. Def. of \cong segs.
3. c. ?	3. Seg. Add. Post.
4. $SU + TU = SV$	4. d. ?

a. Given

b. $TU = UV$

c. $SU + UV = SV$

d. Substitution

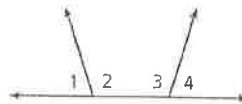
9.

Fill in the blanks to complete the two-column proof.

Given: $m\angle 1 + m\angle 3 = 180^\circ$

Prove: $\angle 1 \cong \angle 4$

Proof:



Statements	Reasons
1. $m\angle 1 + m\angle 3 = 180^\circ$	1. a. ?
2. b. ?	2. Def. of supp. \angle
3. $\angle 3$ and $\angle 4$ are supplementary.	3. Lin. Pair Thm.
4. $\angle 3 \cong \angle 4$	4. c. ?
5. d. ?	5. \cong Supps. Thm.

a. Given

b. $\angle 1 + \angle 3$ are supp.

c. Reflexive POC

d. $\angle 1 \cong \angle 4$