

1. What kind of reasoning is used to build and support an argument off of true statements?

DEDUCTIVE REASONING

2. What kind of reasoning is based off of looking at a pattern and thinking something to be true?

Inductive Reasoning

3. List the postulate described by the given examples below:

a. $AB + BC = AC$ SEGMENT ADDITION POSTULATE

b. $m\angle JKL + m\angle LKM = m\angle JKM$ ANGLE ADDITION POSTULATE

4. Select all that apply: Once a theorem has been proven, we...

a. Need to prove it again next time we use it in a proof

b. Never have to think about it again

☒ c. Can use it as a "Reason" as many times as we want

d. Need to prove the converse (that it works in the opposite direction as well)

5. Given two intersecting lines as shown in the diagram, which conclusions can be drawn? Select all that apply.

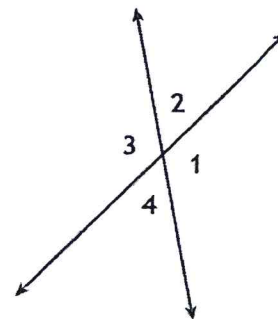
a. $m\angle 1 = m\angle 2$

☒ b. $\angle 1$ and $\angle 3$ are vertical angles

☒ c. $m\angle 2 = m\angle 4$

☒ d. $m\angle 3 + m\angle 4 = 180^\circ$

☒ e. $\angle 2$ and $\angle 3$ are supplementary



6. Fill in the correct reasons for the statements below:

Statements	Reasons
1. $4x - 7 = 2x + 3$	1. Given equation
2. $2x - 7 = 3$	2. <i>SUBTRACTION PROPERTY OF EQUALITY</i>
3. $2x = 10$	3. <i>ADDITION PROPERTY OF EQUALITY</i>
4. $x = 5$	4. <i>DIVISION PROPERTY OF EQUALITY</i>

7-9. Complete the proofs below.

Given: $\overline{PR} \cong \overline{QS}$

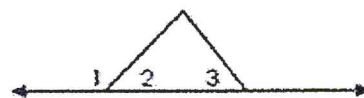
Prove: $\overline{PQ} \cong \overline{RS}$



Statements	Reasons
a. $\overline{PR} \cong \overline{QS}$	a. <u>GIVEN</u>
b. $PR = QS$	b. <u>DEFINITION OF CONGRUENCE OF SEGMENTS</u>
c. $PQ + QR = PR$	c. <u>SEGMENT ADDITION POSTULATE</u>
d. <u>$QR + RS = QS$</u>	d. Segment Addition Postulate
e. $PQ + QR = QR + RS$	e. <u>SUBSTITUTION</u>
f. <u>$PQ = RS$</u>	f. Subtraction Property
g. <u>$\overline{PQ} \cong \overline{RS}$</u>	g. Definition of congruence of segments

Given: $\angle 1$ and $\angle 2$ form a linear pair
 $\angle 1$ and $\angle 3$ are supplementary

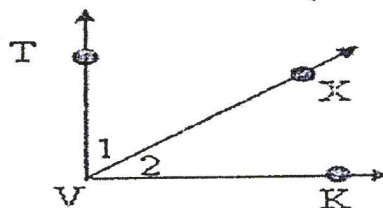
Prove: $\angle 2 \cong \angle 3$



Statements	Reasons
1. $\angle 1$ and $\angle 2$ form a linear pair	<u>GIVEN</u>
2. $\angle 1$ and $\angle 2$ are supplementary	<u>LINEAR PAIR THEOREM</u>
3. $m\angle 1 + m\angle 2 = 180^\circ$	<u>DEFINITION OF SUPPLEMENTARY</u>
4. $\angle 1$ and $\angle 3$ are supplementary	<u>GIVEN</u>
5. $m\angle 1 + m\angle 3 = 180^\circ$	<u>DEFINITION OF SUPPLEMENTARY</u>
6. $m\angle 1 + m\angle 2 = m\angle 1 + m\angle 3$	<u>SUBSTITUTION</u>
7. $m\angle 2 = m\angle 3$	<u>SUBTRACTION PROPERTY OF EQUALITY</u>
8. $\angle 2 \cong \angle 3$	<u>DEFINITION OF CONGRUENCE OF ANGLES</u>

Given: $\angle TVK$ is a right angle.

Prove: $\angle 1$ is complementary to $\angle 2$.



Statements	Reasons
1. $\angle TVK$ is a right angle	1. <u>GIVEN</u>
2. $m\angle TVK = 90^\circ$	2. <u>DEFINITION OF RIGHT ANGLE</u>
3. <u>$m\angle 1 + m\angle 2 = m\angle TVK$</u>	3. <u>Angle addition postulate</u>
4. <u>$\angle 1 + \angle 2 = 90^\circ$</u>	4. <u>SUBSTITUTION</u>
5. <u>$\angle 1$ is complementary to $\angle 2$</u>	5. <u>Definition of Complementary angles.</u>