Name: Key

Review for Unit 4

Test is Friday 10/25/19

1- What do you use to prove that a statement is true?

To prove a statement is true, I can use definitions, postulates, properties, theorems, ---

2- List some examples for #1

- Angle Addition postulate
- Linear pair theorem
- Substitution property

(Answers May Vary)

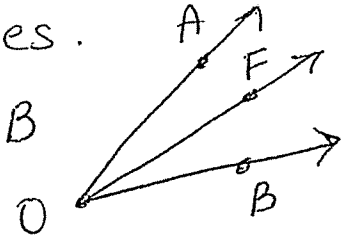
3- Once we have proven a certain theorem can we use it to prove another theorem?

* I can use any of the proven theorems to prove that another theorem represent a true statement.

4- What do you know about Angle bisector? Draw a picture to give an example

An Angle bisector is a line that cut an angle into two equal halves.

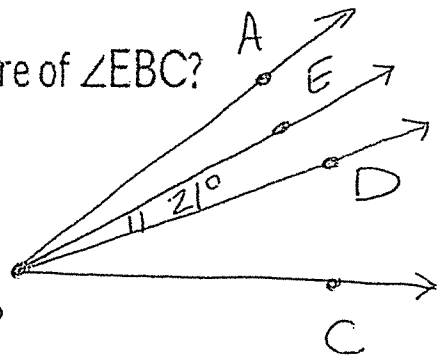
* $\overrightarrow{OF}$ bisect $\angle AOB$



5-

$\overline{BD}$ bisects $\angle ABC$ and $\overline{BE}$ bisects $\angle ABD$.

If $m\angle EBD = 21°$, then what is the measure of $\angle EBC$?



$m\angle EBD = 21°$

$m\angle EBD = m\angle ABE = 21$

$m\angle ABD = 21° + 21°$

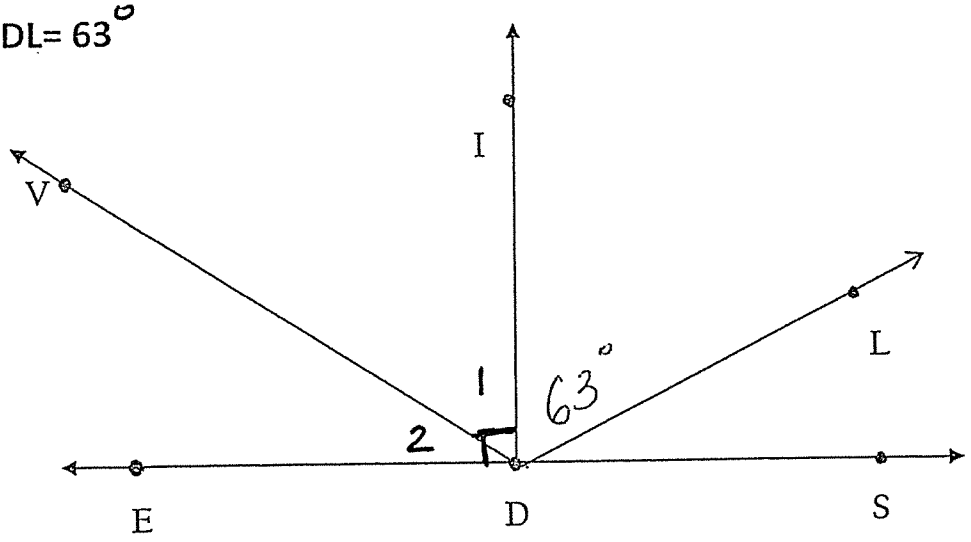
$= 42°$

Since $m\angle ABD = m\angle DBC = 42°$

So, $\angle EBC = 42° + 21° = 63°$

6- $\overrightarrow{DV}$ is the bisector for <EDI

m< IDL= 63°



a- m< 1= m∠2 = 45°

b- <1 ≅ ∠2

c- <DIV ≅ <VD E
∠IDV

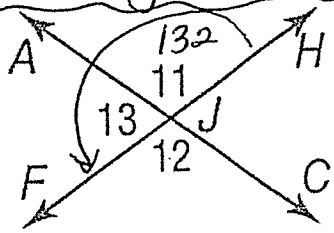
Replace ∠DIV by ∠IDV

d- m< LDV= 63° + 45° = 108°

7-

. Find the measure of each numbered angle. (Replace m∠13 by m∠12)

m∠11 = 11x,
m∠12 = 10x + 12



Vertical angles are Congruent

m∠11 = m∠12

11x = 10x + 12

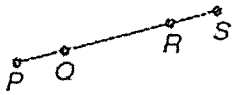
x = 12

m∠11 = 132 = m∠12

m∠13 = 180 − 132 = 48°

8-

Complete the proof.
Given: $\overline{PR} \cong \overline{QS}$
Prove: $\overline{PQ} \cong \overline{RS}$

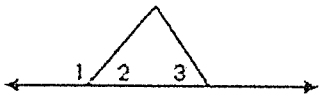


Statements	Reasons
a. $\overline{PR} \cong \overline{QS}$	a. Given
b. $PR = QS$	b. Def of Congruence
c. $PQ + QR = PR$	c. Segment Addition Postulate
d. $QR + RS = QS$	d. Segment Addition Postulate
e. $PQ + QR = QR + RS$	e. Substitution property
f. $PQ = RS$	f. Subtraction Property
g. $\overline{PQ} \cong \overline{RS}$	g. Definition of congruence of segments

Complete the proofs below by filling in the missing statements and reasons.

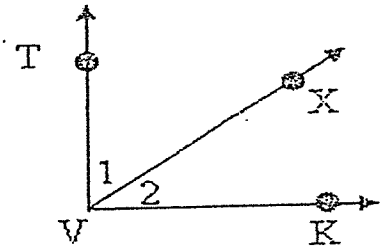
9- Given: ∠1 and ∠2 form a linear pair
∠1 and ∠3 are supplementary

Prove: ∠2 ≅ ∠3



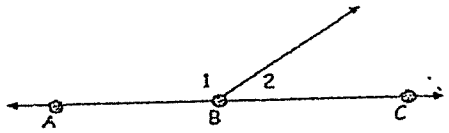
Statements	Reasons
1. ∠1 and ∠2 form a linear pair	Given
2. ∠1 and ∠2 are supplementary	Linear pair Theorem
3. m∠1 + m∠2 = 180°	Definition of Supplementary
4. ∠1 and ∠3 are supplementary	Given
5. m∠1 + m∠3 = 180°	Definition of Supplementary
6. m∠1 + m∠2 = m∠1 + m∠3	Substitution property
7. m∠2 = m∠3	Subtraction property
8. ∠2 ≅ ∠3	Definition of Congruence

10. 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. Given
2. $m\angle TVK = 90°$	2. right angle
3. $m\angle 1 + m\angle 2 = m\angle TVK$	3. Angle addition postulate
4. $\angle 1 + \angle 2 = 90°$	4. Substitution property
5. $\angle 1$ is Complementary to $\angle 2$	5. Definition of Complementary angles.

11. Given: $\angle ABC$ is a straight angle
Prove: $\angle 1$ is supplementary to $\angle 2$.



Statements	Reasons
1. $\angle ABC$ is a straight angle	1. Given
2. $\angle 1 + \angle 2 = \angle ABC$	2. Angle Addition postulate
3. $\angle 1$ and $\angle 2$ form a linear pair	3. Linear pair theorem
4. $\angle 1$ is Supplementary to $\angle 2$	4. Linear pair theorem

12-

a- List all the transformations that we learned about.

Translation, Reflection, Rotation, dilation, Vertical stretch, Horizontal stretch.

b- Write a definition for each with specific features

- Translation (Slide) side to side
- Reflection (Flip) across a line of reflection.
- Rotation (Turn) ↗ direction ↘ angle degree.
- dilation (Enlarge or shrink) using scale factor.

c- Given an example of each

1. Translation Ex $(x,y) \rightarrow (x+2, y-3)$
2. Reflection Ex $(x,y) \rightarrow (-x,y)$ reflect across y-axis
3. Rotation Ex $(x,y) \rightarrow (-x,-y)$ rotate 180°
4. Dilation Ex $(x,y) \rightarrow (2x,2y)$ Enlarge by scale factor of 2.
5. Stretch Ex $(x,y) \rightarrow (2x, 3y)$

d- List which one of the above transformations represent congruence. Explain your reasoning

- Translation, Reflection, Rotation

e- List which one of the above transformation represent similarity. Explain your reasoning

- Dilation.