Name __Key__   Date _____ Pd ____

Quiz Review 3.1 - 3.3: Lines and Transversals

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
AEA	1 – 5	6 – 11	16 – 19
AIA	1 – 5	6 – 12	15 – 19
Corr. ∠'s	1 – 5	6 – 11	15 – 19
SSIA	1 – 5	6 – 11, 13	15 – 19
SSEA	1 – 5	6 – 11, 14	15 – 19
Transversal	1 – 11	6 - 14	15 – 22
Parallel Lines	6 - 11	6 – 14	14 - 22
System of Equations		13	
Quadratic Formula		12	
Factoring Quadratics		12	
Congruent Angles			21, 22
Transitive POE/POC			20, 21
Given			20 - 22
AIA Thm & Converse			20
Corr. ∠'s Them & Converse			21
AEA Thm & Converse			20
If-then format		13	20 - 22
Angle Bisector			21
Symmetric POE/POC			22
Def of Congruent Angles			22
Substitution POE			22
Subtraction POE			22
SSIA Thm & Converse		13	22
SSEA Thm & Converse			
Vertical Angles	12		15
Linear Pair Postulate			15

Identify the angle pair indicated <u>and</u> the transversal forming the angle pair, respectively. If no relation exists between the angles given, write "none".

1. ∠9 and ∠7 __AEA ; m__

2. ∠2 and ∠3 __SSIA ; m__

3. ∠4 and ∠17 __AEA ; o__

4. ∠13 and ∠16 __corr ∠ ; l__

5. ∠8 and ∠13 __AIA ; n__
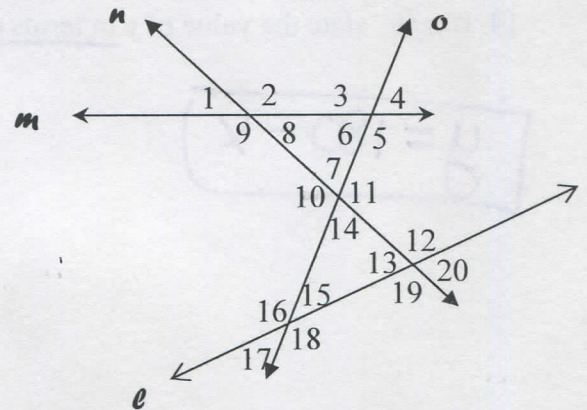
In the figure, m ∠6 = 72° and m ∠8 = 106°. If $\overline{XS} \parallel \overline{YT}$ and $\overline{SY} \parallel \overline{TZ}$, find the indicated angle measures.
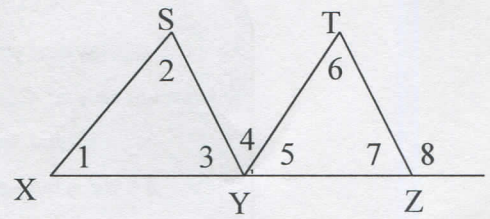*(HINT: find all angle measures first then fill in answers, ALSO mark your given.)*

6. m∠1 = __**34°**__

9. m∠4 = __**72°**__

7. m∠2 = __**72°**__

10. m∠5 = __**34°**__

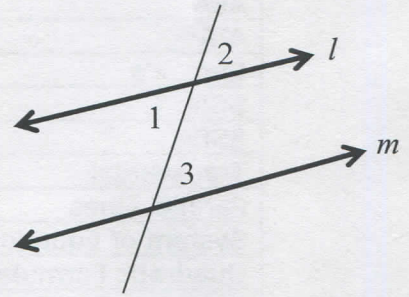8. m∠3 = __**74°**__

11. m∠7 = __**74°**__

---

12. Determine the value(s) for x for which $l \parallel m$ if

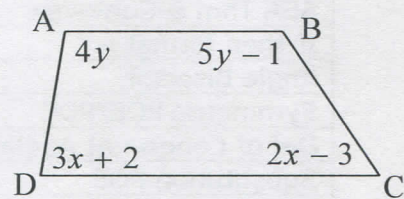$$m\angle 1 = \left(x^2 - 7x\right)^\circ$$
$$m\angle 3 = (7x + 32)^\circ$$

X = -2, 16

---

13. $\overline{AB} \parallel \overline{DC}$. Find x and y and give the geometric reason for your algebraic set up.
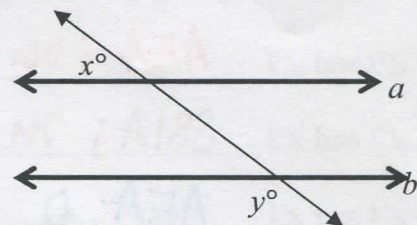
x = __**22**__ y = __**28**__

Geometric Reason: __**If ⟺ R // ⇒ SSIA**__
__**R supplementary. (SSIA Thm)**__

In the figure (trapezoid):
A — B with angles $4y$, $5y - 1$
D — C with angles $3x + 2$, $2x - 3$

---

14. If $a \parallel b$, state the value of y in terms of x.

y = 180 - x

15. Given a∥b∥c. Which is larger, m∠ABC or m∠BAC + m∠BCA? Justify your answer with computations.

m∠ABC is larger

150°
A
B   b
a
C / 119°
c
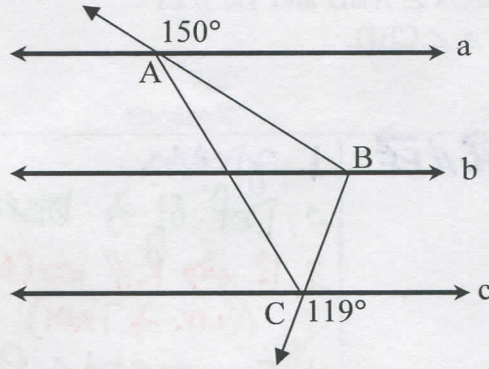
16. If a // b, but c is not parallel to d, name all angles congruent to ∠ 2.
    ∠4, ∠7, ∠5

17. If c // d, but a is not parallel to b, name all angles congruent to ∠ 2.
    ∠5, ∠10, ∠13

18. If a // b and c // d, name all the angles congruent to ∠ 1.
    ∠9, ∠6, ∠14, ∠3, ∠8, ∠16, ∠11

19. If a // b and c // d, name all the angles supplementary to ∠ 1.
    ∠2, ∠5, ∠10, ∠13, ∠4, ∠7, ∠12, ∠15

		c
1 2	3 4	
5 6	7 8	
9 10	11 12	d
13 14	15 16	
a	b	
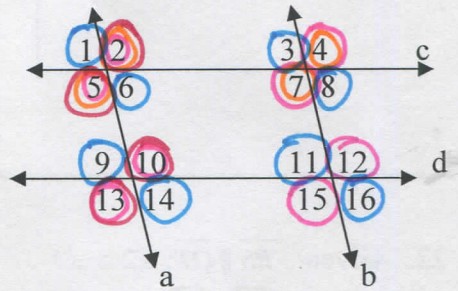
Be sure to draw a two-column proof. Label the statements and reasons. Then number each statement and reason when solving the proof. Once you write the statements MARK IT ON THE DIAGRAM!

j   k

20. Given: l \\m, ∠1 ≅ ∠2
    Prove: j \\k

2
l
1
3
m
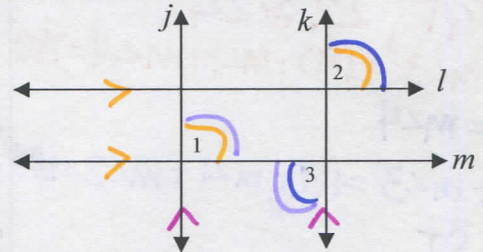
Statements	Reasons
1. l //m, ∠2 ≅ ∠2	1. given
2. ∠2 ≅ ∠3	2. If ⟷ R //⟹ AEA R ≅. (AEA Thm)
3. ∠1 ≅ ∠3	3. Transitive POC
4. j // K	4. If AIA R ≅ ⟹ ⟷ R //. (AIA Converse)

21. GIVEN: $\overrightarrow{BC}$ bisects $\angle ABD$ and $\overrightarrow{BC} \parallel \overrightarrow{EF}$

PROVE: $\angle BEF \cong \angle CBD$.

Statements	Reasons
1. $\overrightarrow{BC}$ bisects $\angle ABD$; $\overrightarrow{BC} \parallel \overrightarrow{EF}$	1. given
2. $\angle ABC \cong \angle CBD$	2. Def of $\angle$ bisector
3. $\angle ABC \cong \angle BEF$	3. If $\leftrightarrow$ R $\parallel$ $\Rightarrow$ Corr. $\angle$'s R $\cong$. (Corr. $\angle$ Thm)
4. $\angle BEF \cong \angle ABC$	4. Symmetric POC
5. $\angle BEF \cong \angle CBD$	5. Transitive POC
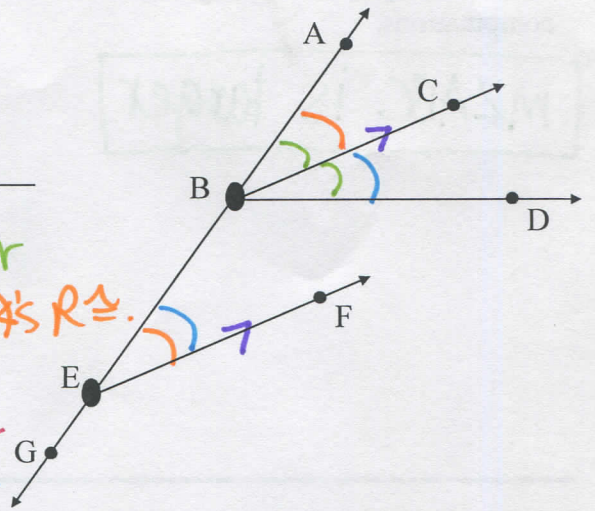
22. Given: $\overline{RS} \parallel \overline{QT}$; $\angle 2 \cong \angle 4$

Prove: $\overline{RQ} \parallel \overline{ST}$
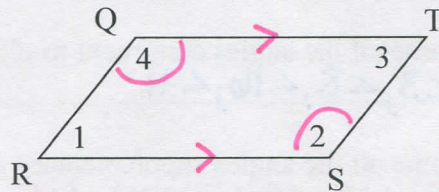
Statements	Reasons
1. $\overline{RS} \parallel \overline{QT}$; $\angle 2 \cong \angle 4$	1. given
2. $m\angle 2 + m\angle 3 = 180$; $m\angle 1 + m\angle 4 = 180$	2. If $\leftrightarrow$ R $\parallel$ $\Rightarrow$ SSIA R supp. (SSIA Thm)
3. $m\angle 2 = m\angle 4$	3. If $\cong$ $\Rightarrow$ =. (Def. of $\cong$ $\angle$'s)
4. $m\angle 4 + m\angle 3 = 180$; $m\angle 1 + m\angle 2 = 180$	4. Substitution POE
5. $\overline{RQ} \parallel \overline{ST}$	5. If SSIA R supp. $\Rightarrow$ $\leftrightarrow$ R $\parallel$. (SSIA Converse)

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give

1	2	3	4	5	6	7	8
Basic		Intermediate			Advanced		Solved ALL!