Homework:

2. ★ **WRITING** Two parallel lines are cut by a transversal. Which pairs of angles are congruent? Which pairs of angles are supplementary?

Congruent: Alt. Int. Angles, Alt. Ext. Angles, Corresponding, and Vertical angles.

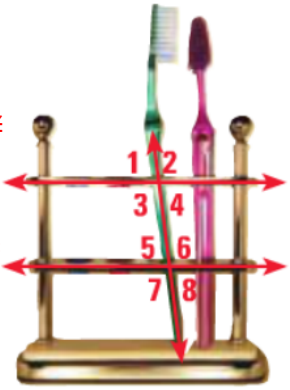
Supplementary: Same-side interior angles and angles that form linear pairs.

USING PARALLEL LINES Find the angle measure. Tell which postulate or theorem you use.

4. If $m\angle 4 = 65°$, then $m\angle 1 =$ 65⁰, Vertical Angles ≅

6. If $m\angle 5 = 71°$, then $m\angle 4 =$ 71⁰, Alt. Int. Angles ≅

8. If $m\angle 8 = 54°$, then $m\angle 1 =$ 54⁰, Alt. Ext. Angles ≅



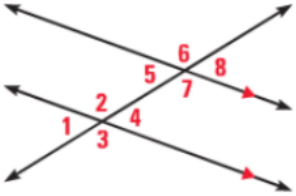
USING POSTULATES AND THEOREMS What postulate or theorem justifies the statement about the diagram?

10. $\angle 4 \cong \angle 5$ Alt. Int. Angles ≅

12. $\angle 2$ and $\angle 5$ are supplementary. Same-Side Int. Angles

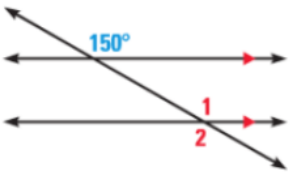
14. $\angle 3 \cong \angle 7$ Corresponding Angles ≅

16. $\angle 4$ and $\angle 7$ are supplementary. Same-Side Int. Angles



USING PARALLEL LINES Find $m\angle 1$ and $m\angle 2$. *Explain* your reasoning.

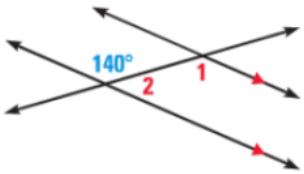
17.



m<1= 150⁰ ≅ Corresponding Angles

m<2= 150⁰ Vertical Angles ≅ (or Alt. Ext. Angles)

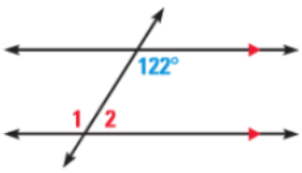
18.



m<1= 140⁰ Alt. Int. Angles ≅

m<2= 40⁰ Same-Side Interior Angles are Supp. (or Linear Pair)

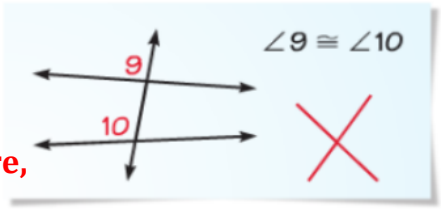
19.



m<1= 122⁰ Alt. Int. Angles ≅

m<2= 58⁰ Same-Side Interior Angles are Supp. (or Linear Pair)

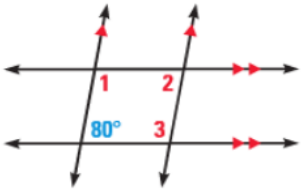
20. ERROR ANALYSIS A student concludes that $\angle 9 \cong \angle 10$ by the Corresponding Angles Postulate. Describe and correct the error in this reasoning.



The lines are not marked as parallel, therefore, the angles are not necessarily congruent.

USING PARALLEL LINES Find $m\angle 1$, $m\angle 2$, and $m\angle 3$. *Explain* your reasoning.

22.

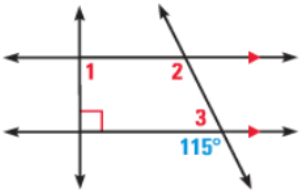


m<1= 100⁰
Same-Side Int. to 80⁰

m<2 = 80⁰
Same-Side-Int. to <1

m<3 = 100⁰
Same-Side-Int. to 80⁰

23.

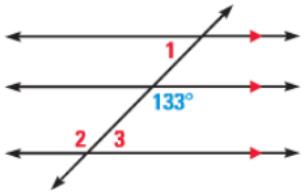


m<1= 90⁰
Same-Side Int. to 90⁰

m<2 = 115⁰
Corresponding to <115⁰

m<3 = 65⁰
Same-Side-Int. to <2

24.



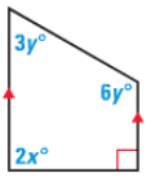
m<1= 47⁰
Alt. Int. to <3

m<2 = 133⁰
Alt. Int. to <2

m<3 = 47⁰
Same-Side-Int. to 133⁰

ALGEBRA Find the values of x and y.

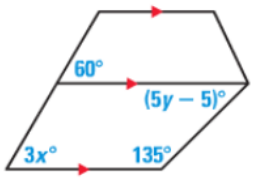
28.



$x = 45$

$y = 20$

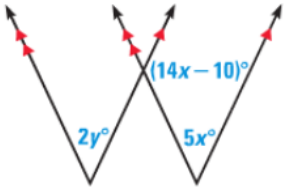
30.



$x = 20$

$y = 10$

32.



$x = 10$

$y = 25$