

SECTION 3.2: PROPERTIES OF PARALLEL LINES

WARMUP

Are the following conditionals true or false?
Are the converses of these true or false?

1. If two lines are perpendicular, then they form congruent adjacent angles
2. If two lines are // then they are not skew
3. Two angles are supplementary if the sum of their measures is 180.
4. Two planes are // only if they do not intersect.

Congruent, supplementary or no conclusion?

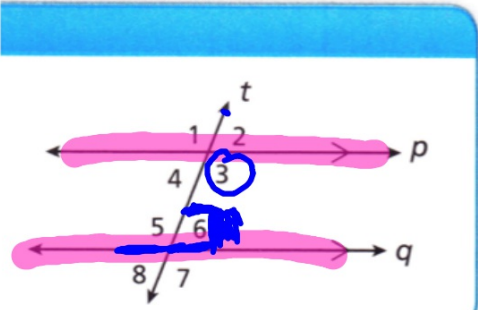
If a // b,

- $\angle 4$ & $\angle 9$
- $\angle 9$ & $\angle 11$
- $\angle 2$ & $\angle 6$
- $\angle 5$ & $\angle 9$

If c // d

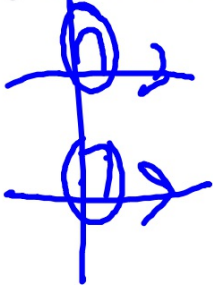
- $\angle 5$ & $\angle 11$
- $\angle 3$ & $\angle 12$
- $\angle 8$ & $\angle 11$
- $\angle 5$ & $\angle 9$

REFLECT



1a. Explain how you can find $m\angle 3$ in the postulate diagram if $p \parallel q$ and $m\angle 6 = 61^\circ$.

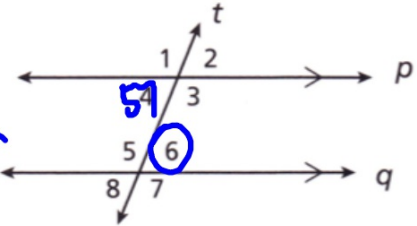
1b. In the postulate diagram, suppose $p \parallel q$ and line t is perpendicular to line p . Can you conclude that line t is perpendicular to line q ? Explain.



REFLECT

- 2a. Suppose $m\angle 4 = 57^\circ$ in the above figure. Describe two different ways to determine $m\angle 6$.

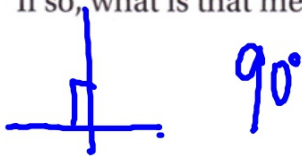
4 supp 3
6 supp 3 \rightarrow If 2 ∇ suppl. same ∇
2 ∇ are \cong



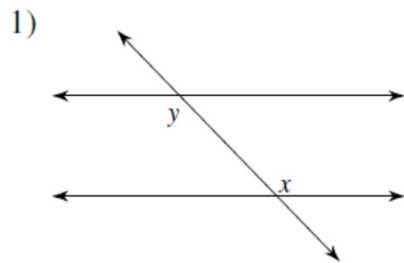
- 2b. In the above figure, explain why $\angle 1$, $\angle 3$, $\angle 5$, and $\angle 7$ all have the same measure.

VA
Corr. \cong

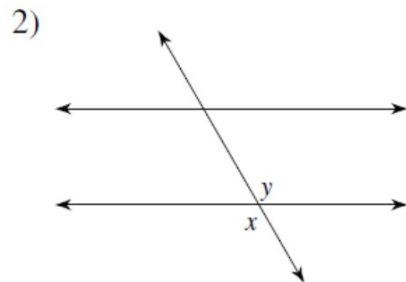
- 2c. In the above figure, is it possible for all eight angles to have the same measure? If so, what is that measure?



Identify each pair of angles as corresponding, alternate interior, same-side interior, or vertical.

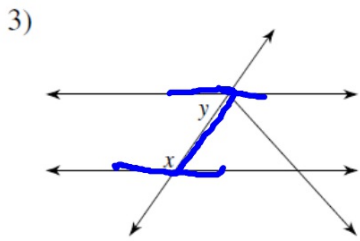


alternate interior

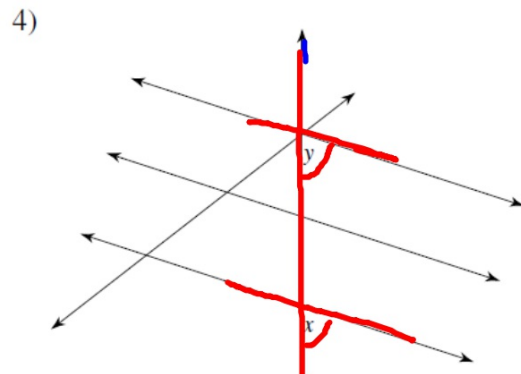


VA

Identify each pair of angles as corresponding, alternate interior, same-side interior, vertical, or adjacent.



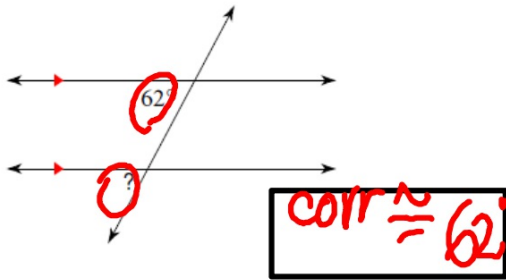
SSI



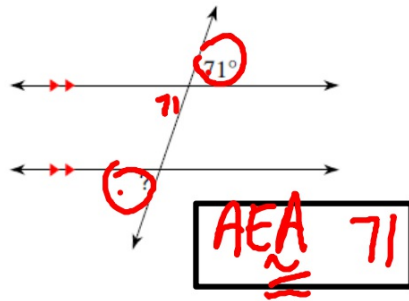
corr

Find the measure of each angle indicated.

5)

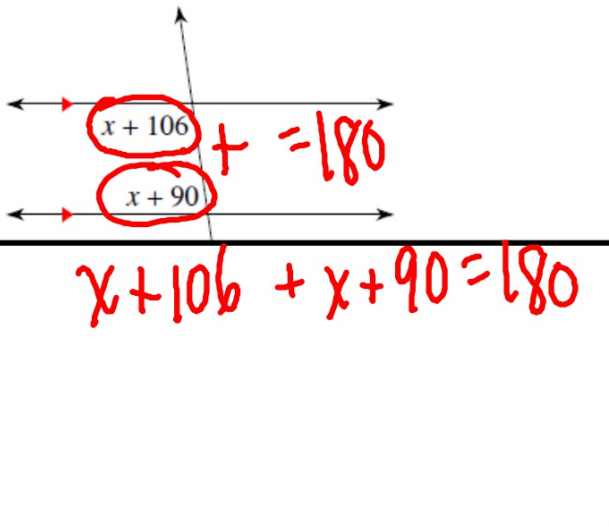


6)

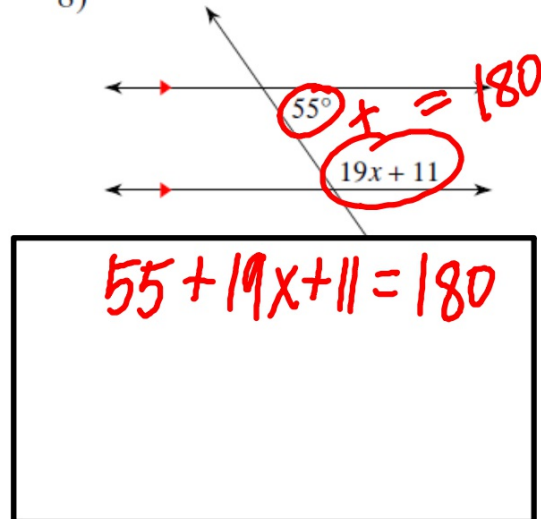


Solve for x .

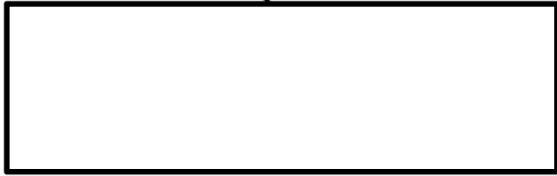
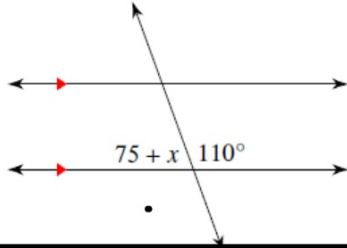
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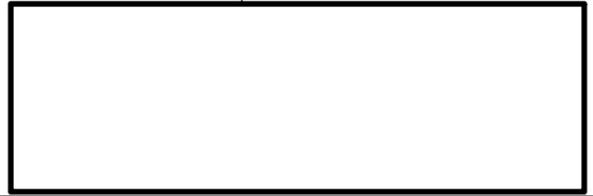
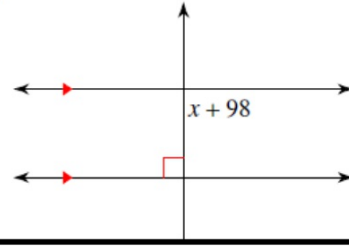
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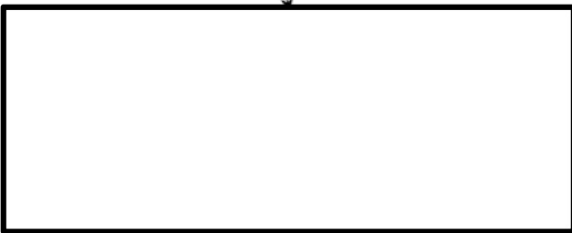
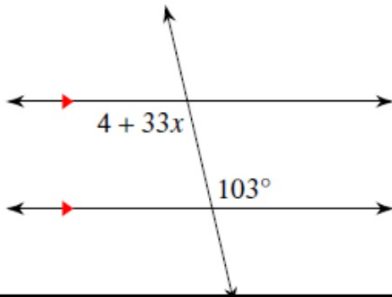
9)



10)



11)



12)

