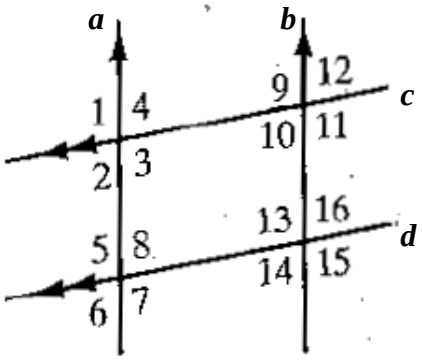
Geometry
Handout 3A
Section 3-2

Name_____

Copy figures for all problems on your own paper and show work.



a* || *b* and *c* || *d

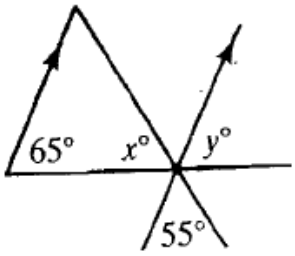
1. If m∠ 13 = 110, find m∠ 11, m∠ 9, m∠ 4, and m∠6.

2. If m∠ 12 = 3*x* – 4 and m∠ 16 = 2*x* + 21, find *x* and m∠ 11.

3. If m∠ 2 = 81 and m∠ 5 = 11*x*, find *x* and m∠15.

Find the values of *x*, *y*, and *z*. Write equations and show work.

4.



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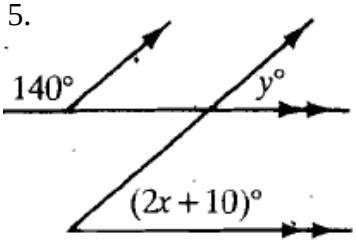

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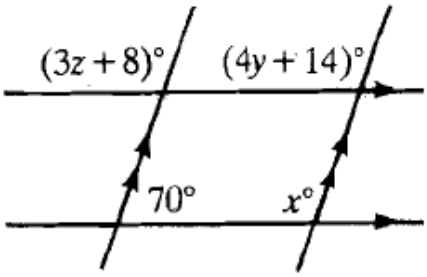

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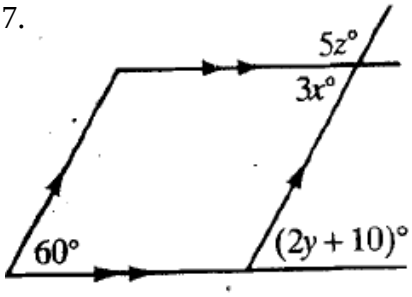

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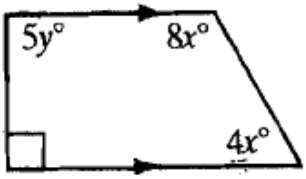

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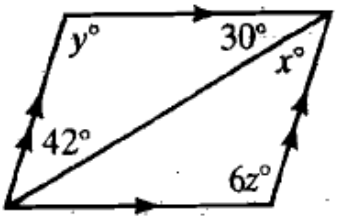
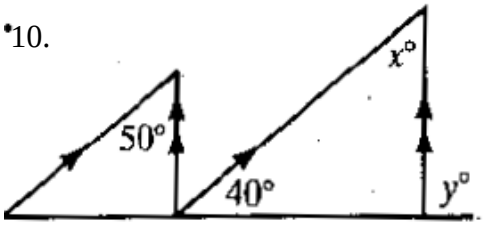
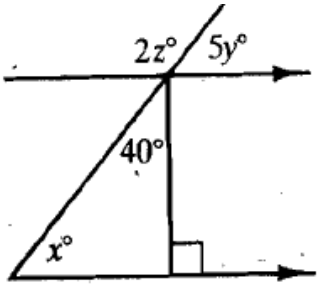


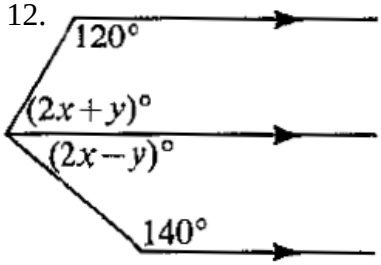
10.



11.

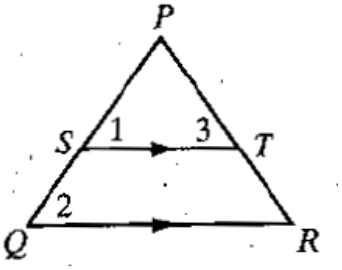


12.

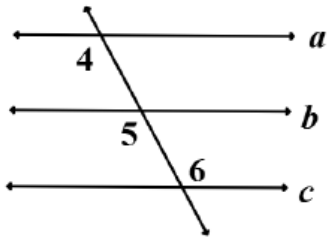


****Copy given, prove and figure on your paper for <u>each</u> proof and write a logical 2-column proof.**

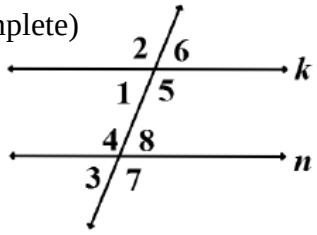
13. Given: $\overline{ST} \parallel \overline{QR}$, $\angle 1 \cong \angle 3$
    Prove: $\angle 2 \cong \angle 3$



14. Given: $a \parallel b$, $b \parallel c$
    Prove: $\angle 4 \cong \angle 6$

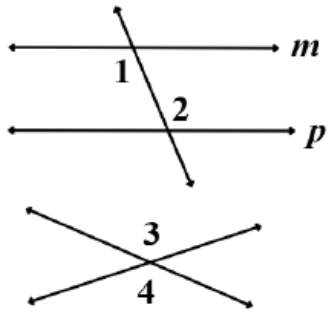


15. (copy everything and complete)
Given: $k \parallel n$
Prove: $m\angle 1 + m\angle 7 = 180$

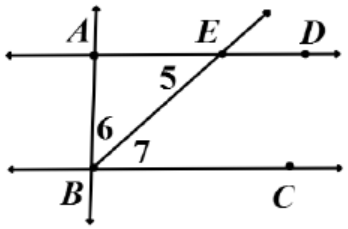


STATEMENTS	REASONS
1. $k \parallel n$	1. ?
2. $m\angle 1 + m\angle 4 = 180$	2. ?
3. $m\angle 4 = m\angle 7$	3. ?
4.	4. ?

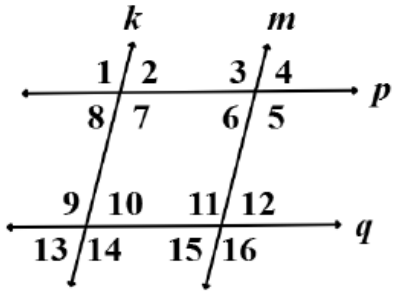
16. Given: $m \parallel p$, $\angle 1 \cong \angle 4$
    Prove: $\angle 2 \cong \angle 3$
(hint: use transitive property twice)



17. Given: $\overleftrightarrow{AD} \parallel \overleftrightarrow{BC}$, $\overrightarrow{BE}$ bisects $\angle ABC$
    Prove: $\angle 6 \cong \angle 5$



(copy the figure below for #18-20)



18. Given: $k \parallel m$, $p \parallel q$
    Prove: $\angle 2 \cong \angle 15$

19. Given: $k \parallel m$, $p \parallel q$
    Prove: $\angle 1 \cong \angle 16$

20. (copy everything and complete)
    Given: $k \parallel m$, $p \parallel q$
    Prove: $m\angle 7 + m\angle 12 = 180$

STATEMENTS	REASONS
1. $k \parallel m$	1. ?
2. $m\angle 7 + m\angle 6 = 180$	2. ?
3. $p \parallel q$	3. ?
4. $m\angle 6 = m\angle 12$	4. ?
5. ?	5. ?