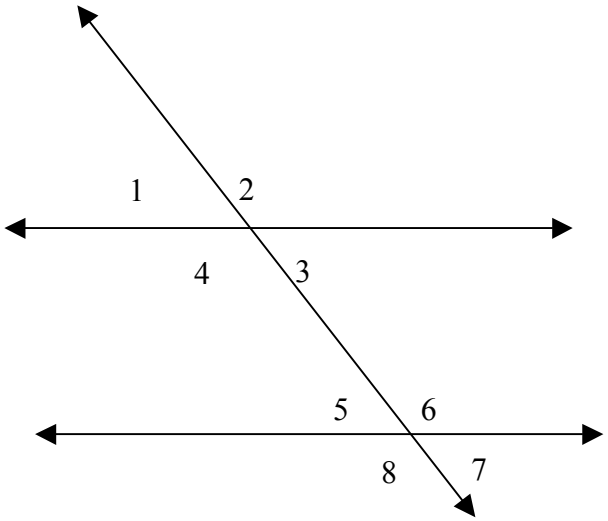
9.5 – PARALLEL LINES AND A TRANSVERSAL

- **Parallel lines –** Two lines that do not intersect.
- **Transversal –** a line that intersects two parallel lines.

Parallel lines cut by a transversal



How many angles are formed?

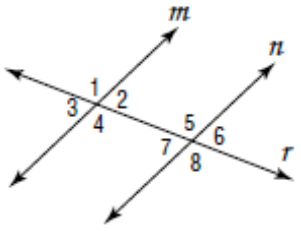
List all vertical angle pairs:

List all supplementary angle pairs:

Name the two pairs of interior angles that must be congruent so that the lines remain parallel:

LP#1

In the figure at the right, $m \parallel n$ and r is a transversal. If $m\angle 2 = 45°$, find the measure of each angle.



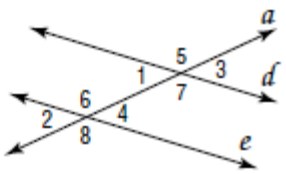
1. $\angle 4$ **2.** $\angle 5$

3. $\angle 7$ **4.** $\angle 8$

5. $\angle 6$ **6.** $\angle 3$

LP#2

In the figure at the right, $d \parallel e$ and a is a transversal. If $m\angle 5 = 143°$, find the measure of each angle.

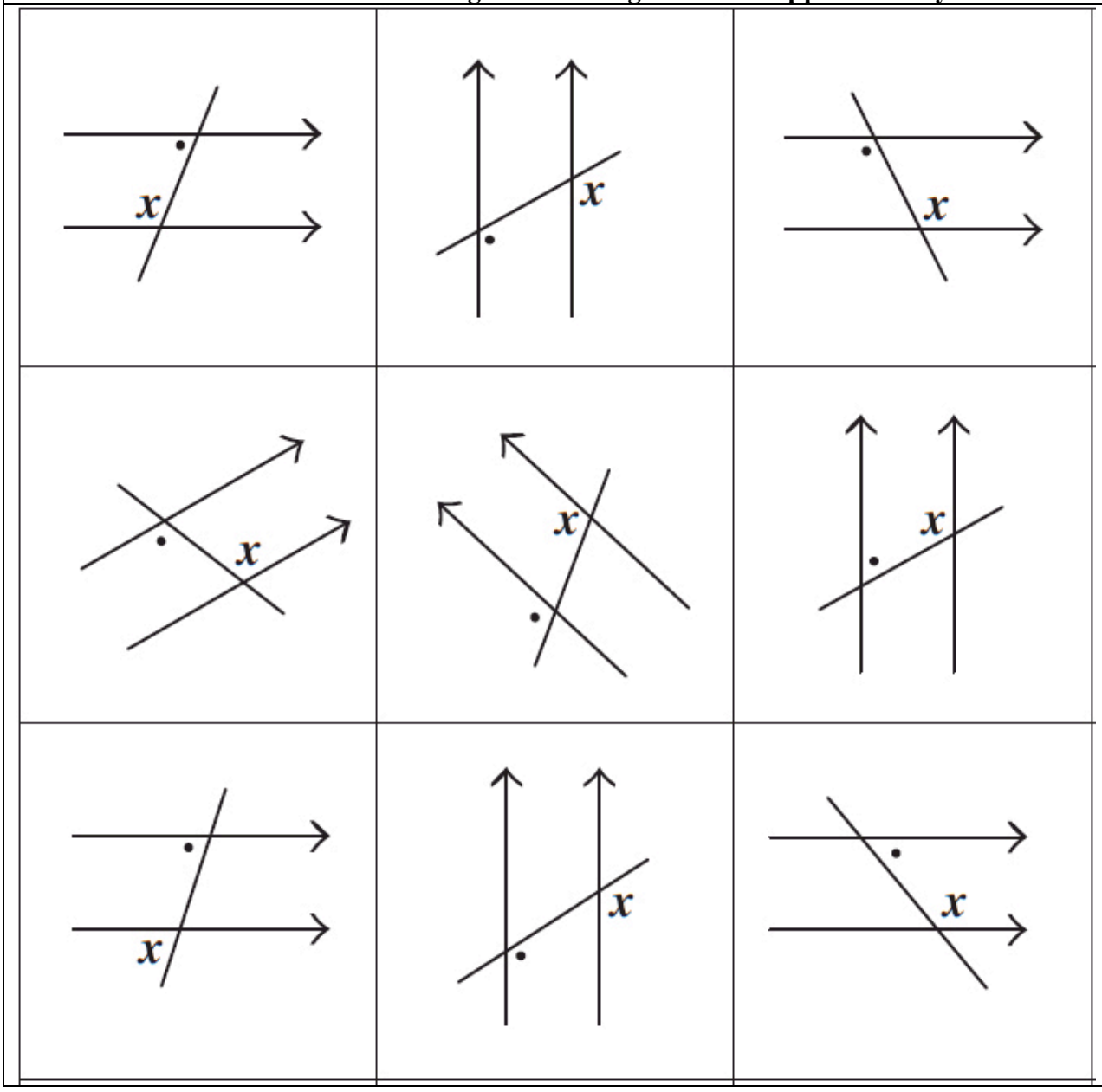


7. $\angle 7$ **8.** $\angle 6$

9. $\angle 4$ **10.** $\angle 2$

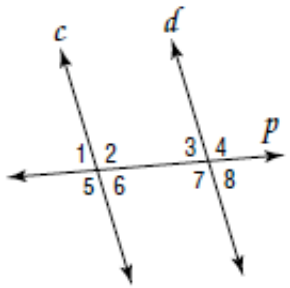
11. $\angle 1$ **12.** $\angle 8$

LP#3 – State whether the mark angles are congruent or supplementary.



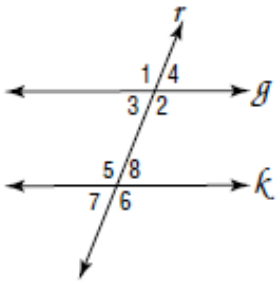
Review

In the figure at the right, $c \parallel d$ and p is a transversal. If $m\angle 5 = 110°$, find the measure of each angle.



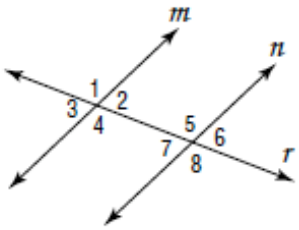
1. $\angle 6$
2. $\angle 8$
3. $\angle 2$
4. $\angle 4$

In the figure at the right, $g \parallel k$ and r is a transversal. If $m\angle 7 = 60°$, find the measure of each angle.



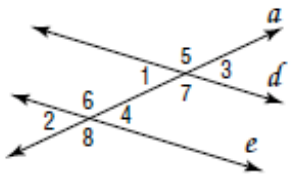
5. $\angle 4$
6. $\angle 6$
7. $\angle 5$
8. $\angle 3$

In the figure at the right, $m \parallel n$ and r is a transversal. If $m\angle 2 = 45°$, find the measure of each angle.



1. $\angle 4$
2. $\angle 5$
3. $\angle 7$
4. $\angle 8$
5. $\angle 6$
6. $\angle 3$

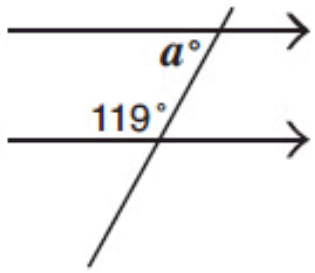
In the figure at the right, $d \parallel e$ and a is a transversal. If $m\angle 5 = 143°$, find the measure of each angle.



7. $\angle 7$
8. $\angle 6$
9. $\angle 4$
10. $\angle 2$
11. $\angle 1$
12. $\angle 8$

Homework - #1-12, find the missing measure of the angle labeled with a variable.

1)



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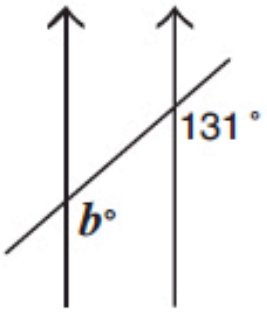

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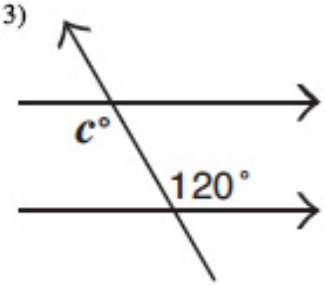

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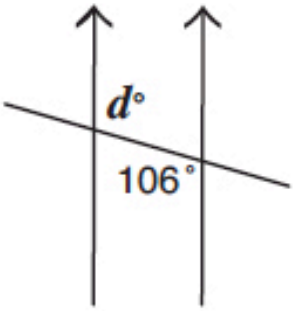

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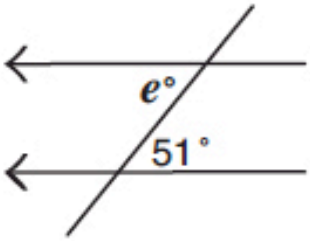

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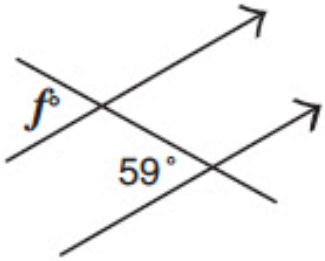

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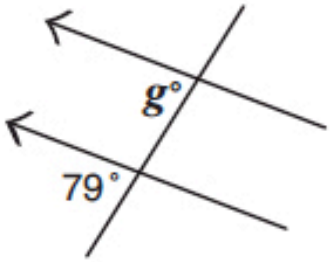

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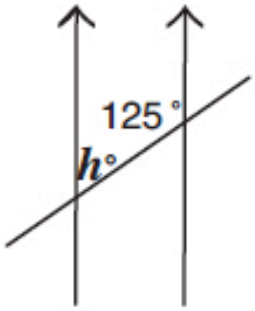

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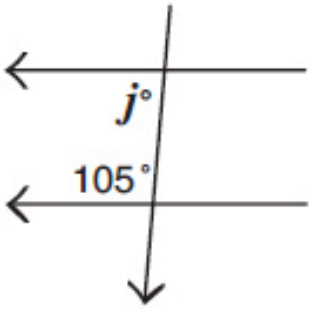

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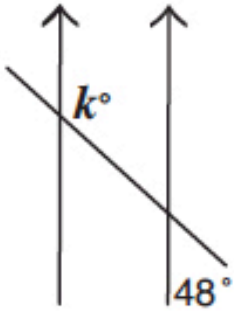

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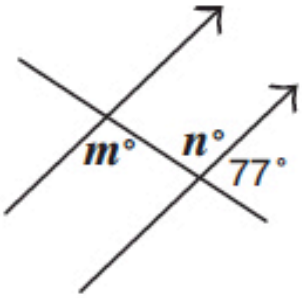

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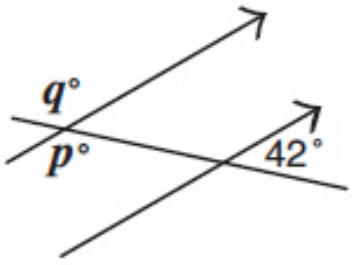
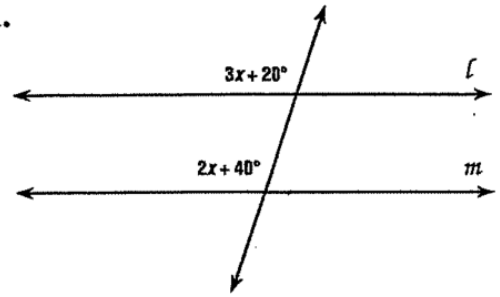


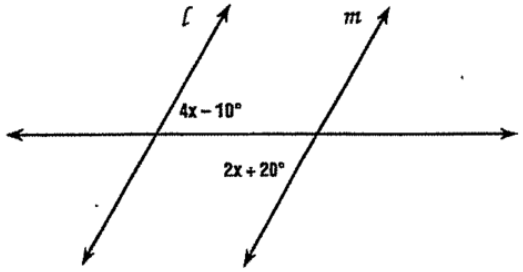
Parallel Lines – Algebra

For exercises 1 to 6, find the value of x so that $\ell \parallel m$.

1.



2.



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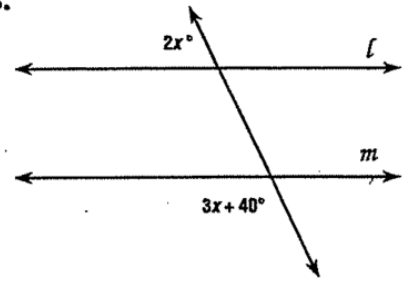

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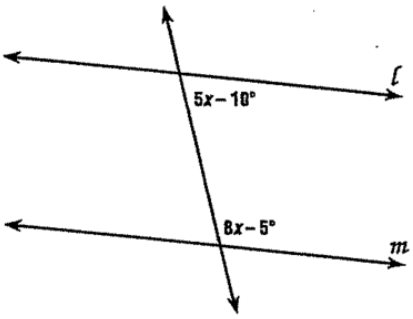

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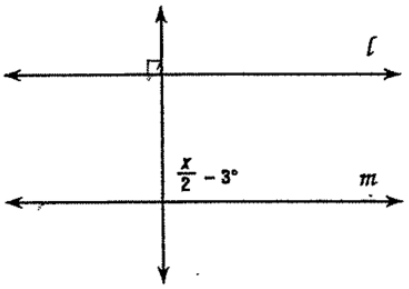

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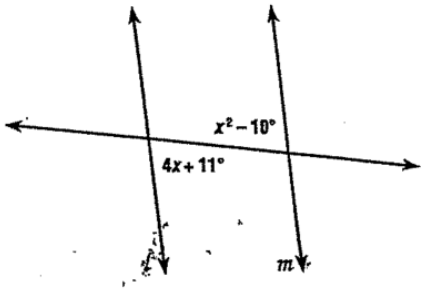
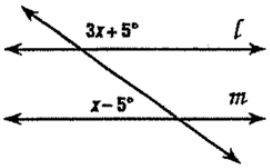


7. If $\ell \parallel m$, can $x = 50$? Justify your answer.



8. Find $m\angle 1$ for the figure at the right.