

# parallel Lines & Transversals

If two PARALLEL lines are cut by a transversal, then..

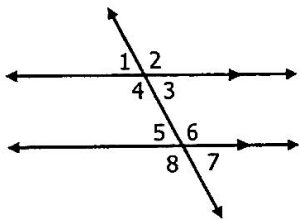
- Each pair of **corresponding angles** is congruent
- Each pair of **alternate interior angles** is congruent.
- Each pair of **alternate exterior angles** is congruent.
- Each pair of **consecutive interior angles** is supplementary.

And recall from Unit 1, **vertical angles** are always congruent and a **linear pair** is always supplementary.

{So If we know one angle measure, then we can find them all!}

## Example 1

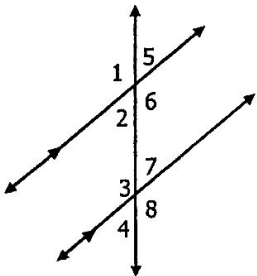
Given  $m\angle 1 = 65^\circ$ , find the measure of each missing angle. Give your reasoning.



|                  |  |
|------------------|--|
| a. $m\angle 2 =$ |  |
| b. $m\angle 3 =$ |  |
| c. $m\angle 4 =$ |  |
| d. $m\angle 5 =$ |  |
| e. $m\angle 6 =$ |  |
| f. $m\angle 7 =$ |  |
| g. $m\angle 8 =$ |  |

## Example 2

Given  $m\angle 6 = 142^\circ$ , find the measure of each missing angle. Give your reasoning.

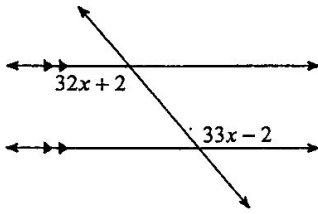


|                  |  |
|------------------|--|
| a. $m\angle 1 =$ |  |
| b. $m\angle 2 =$ |  |
| c. $m\angle 3 =$ |  |
| d. $m\angle 4 =$ |  |
| e. $m\angle 5 =$ |  |
| f. $m\angle 7 =$ |  |
| g. $m\angle 8 =$ |  |

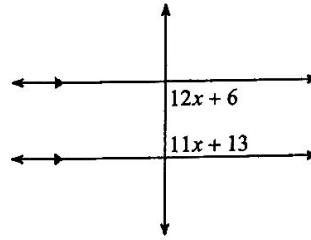
### Angles Formed by Transversals and Parallel Lines

Write an equation and justify your equation with a postulate or theorem. Then solve for  $x$ .

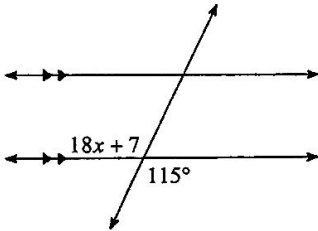
1)



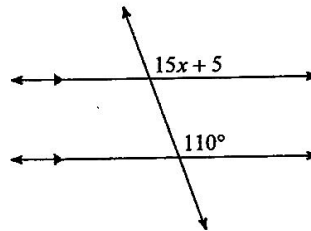
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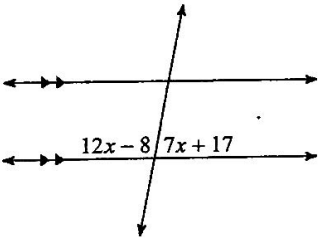
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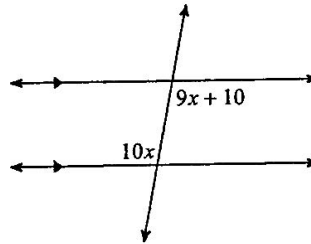
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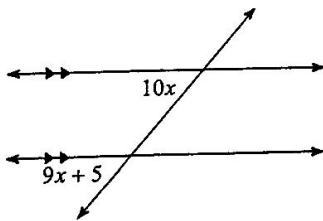
5)



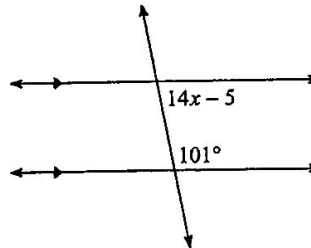
6)



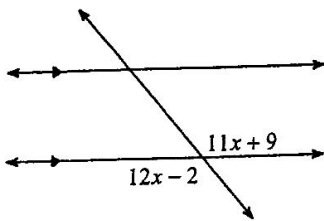
7)



8)



9)



10)

