

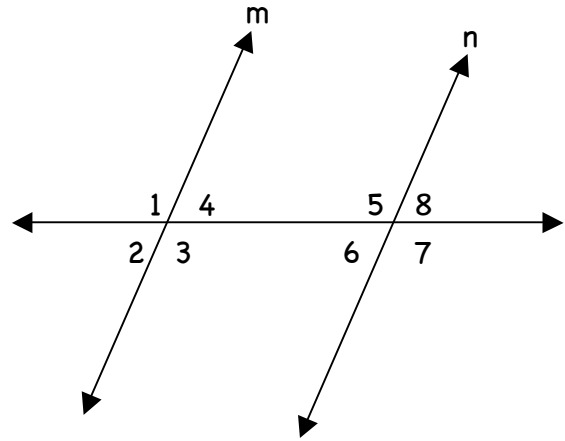
Name \_\_\_\_\_

Date \_\_\_\_\_ Class \_\_\_\_\_

## Finding Angle Measures with Indirect Relationships

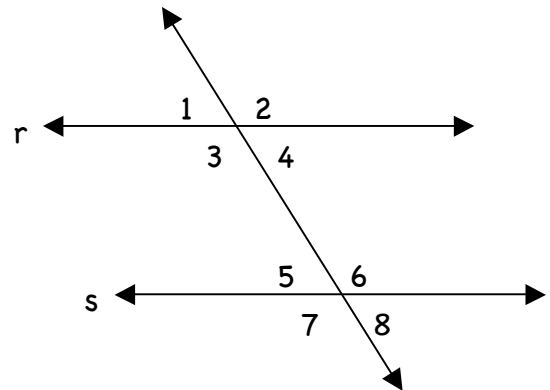
Using the diagram at the right, answer the following questions. Note:  $m \parallel n$

1. If  $m \angle 1 = 100^\circ$ , what is  $m \angle 8$ ?
2. If  $m \angle 4 = 68^\circ$ , what is  $m \angle 6$ ?
3. If  $m \angle 3 = 102^\circ$ , what is  $m \angle 6$ ?
4. If  $m \angle 7 = 98^\circ$ , what is  $m \angle 1$ ?
5. If  $m \angle 2 = 65^\circ$ , what is  $m \angle 7$ ?
6. If  $m \angle 5 = 125^\circ$ , what is  $m \angle 2$ ?
7. If  $m \angle 6 = 53^\circ$ , what is  $m \angle 5$ ?
8. If  $m \angle 8 = 54^\circ$ , what is  $m \angle 4$ ?



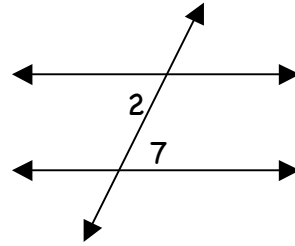
Using the diagram at the right, answer the following questions. Note:  $r \parallel s$

9. Solve for  $r$  if  $m \angle 1$  is  $5r - 25$   
and  $m \angle 5$  is  $75^\circ$ .
10. Solve for  $x$  if  $m \angle 3$  is  $\frac{1}{2}x + 40$   
and  $m \angle 6$  is  $120^\circ$ .
11. Solve for  $s$  if  $m \angle 2$  is  $3s + 30$   
and  $m \angle 8$  is  $60^\circ$ .
12. Solve for  $z$  if  $m \angle 7$  is  $2z - 12$   
and  $m \angle 4$  is  $80^\circ$ .

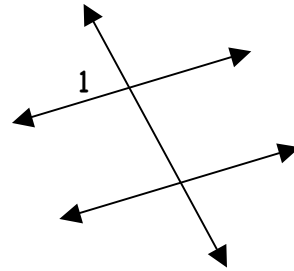


Solve each problem using the diagram to the right of the problem. Each diagram has a pair of parallel lines cut by a transversal.

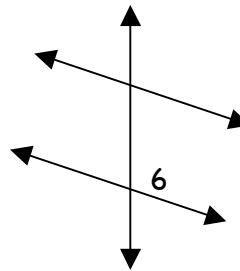
13. If  $m\angle 2 = 70^\circ$ , what is  $m\angle 7$ ?  
How would you determine that?



14. If  $m\angle 1 = 3x + 12$  and its adjacent angle measure is  $96^\circ$ , what is the value of  $x$ ?



15. If  $m\angle 6 = 2x - 4$  and its corresponding angle measure is  $76^\circ$ , what is the value of  $x$ ?



16. Find the measure of as many of these angles as you can using this diagram of 3 parallel lines and 2 transversals.

