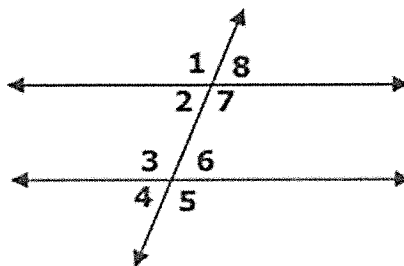


Name: \_\_\_\_\_

I) In the figure,  $l \parallel m$ . Find the measure of each angle. Each problem is different.



1) If  $m\angle 7 = 100^\circ$ , then  $m\angle 3 =$  \_\_\_\_\_

2) If  $m\angle 7 = 175^\circ$ , then  $m\angle 6 =$  \_\_\_\_\_

3) If  $m\angle 7 = 120^\circ$ , then  $m\angle 5 =$  \_\_\_\_\_

4) If  $m\angle 4 = 20^\circ$ , then  $m\angle 7 =$  \_\_\_\_\_

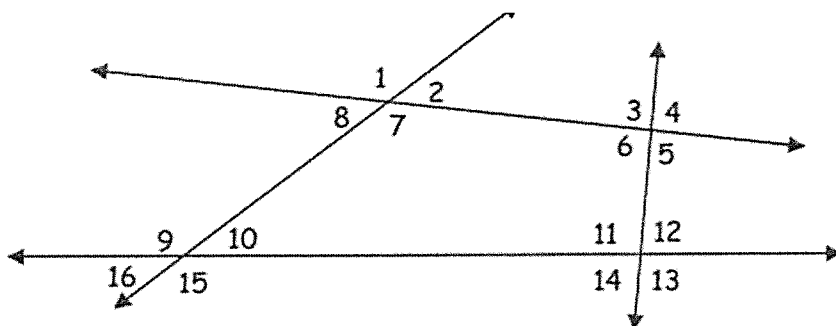
5) If  $m\angle 3 = 140^\circ$ , then  $m\angle 8 =$  \_\_\_\_\_

6) If  $m\angle 4 = 30^\circ$ , then  $m\angle 1 =$  \_\_\_\_\_

7) If  $m\angle 4 = 40^\circ$ , then  $m\angle 2 =$  \_\_\_\_\_

8) If  $m\angle 7 = 125^\circ$ , then  $m\angle 4 =$  \_\_\_\_\_

II)



Use the picture above to identify the special name for the angle pairs.

1)  $\angle 2$  and  $\angle 6$  \_\_\_\_\_

2)  $\angle 1$  and  $\angle 9$  \_\_\_\_\_

3)  $\angle 9$  and  $\angle 6$  \_\_\_\_\_

4)  $\angle 9$  and  $\angle 13$  \_\_\_\_\_

5)  $\angle 14$  and  $\angle 16$  \_\_\_\_\_

6)  $\angle 10$  and  $\angle 16$  \_\_\_\_\_

7)  $\angle 2$  and  $\angle 1$  \_\_\_\_\_

8)  $\angle 10$  and  $\angle 14$  \_\_\_\_\_

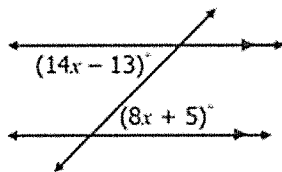
9)  $\angle 11$  and  $\angle 6$  \_\_\_\_\_

10)  $\angle 15$  and  $\angle 11$  \_\_\_\_\_

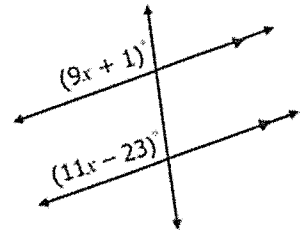
11)  $\angle 4$  and  $\angle 13$  \_\_\_\_\_

12)  $\angle 3$  and  $\angle 11$  \_\_\_\_\_

1. Find the value of  $x$ .

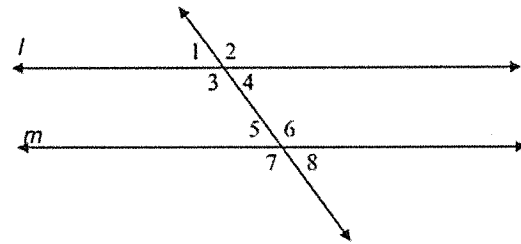


2. Find the value of  $x$ .



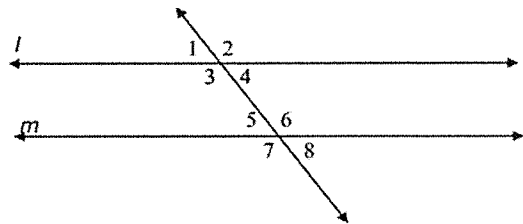
IV) Use properties, postulate, theorems, definitions to prove the below statements are true.

1. Given:  $l \parallel m$   
Prove:  $m\angle 1 = m\angle 8$



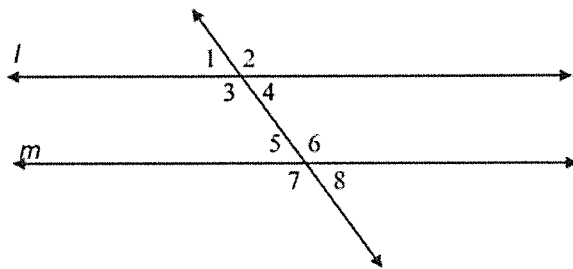
| Statements                | Reasons              |
|---------------------------|----------------------|
|                           | Given                |
| $\angle 1 \cong \angle 4$ |                      |
|                           | Corresponding angles |
| $\angle 1 \cong \angle 8$ |                      |
|                           | Def of Congruence .  |

2. Given:  $l \parallel m$   
Prove:  $m\angle 1 + m\angle 7 = 180^\circ$



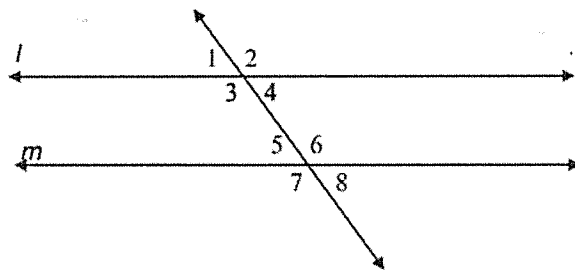
| Statements                          | Reasons               |
|-------------------------------------|-----------------------|
| $l \parallel m$                     |                       |
|                                     | Corresponding angles  |
| $m\angle 1 = m\angle 5$             |                       |
| $m\angle 5 + m\angle 7 = 180^\circ$ |                       |
|                                     | Substitution property |

3. Given:  $l \parallel m$   
 Prove:  $\angle 1$  and  $\angle 6$  are supplementary.



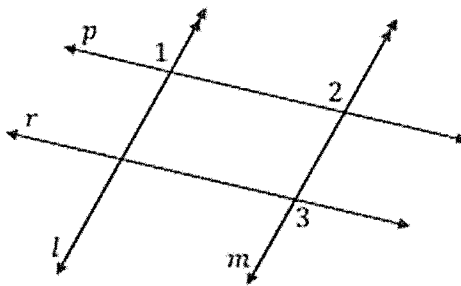
| Statements | Reasons |
|------------|---------|
|            |         |
|            |         |
|            |         |
|            |         |
|            |         |

4. Given:  $l \parallel m$   
 Prove:  $\angle 2 \cong \angle 7$



| Statements                | Reasons               |
|---------------------------|-----------------------|
| $l \parallel m$           |                       |
|                           | Vertical angles       |
| $\angle 3 \cong \angle 7$ |                       |
|                           | Transitive property . |
|                           |                       |

- 5) Given:  $l \parallel m$  and  $\angle 1 \cong \angle 3$   
 Prove:  $r \parallel p$



2-Column Proof:

| Statements | Reasons |
|------------|---------|
|            |         |
|            |         |
|            |         |
|            |         |
|            |         |

$\angle 1 \cong \angle 2$

$\angle 2 \cong \angle 3$

$r \parallel p$

$l \parallel m$

Given

Converse of Alternate Exterior Angles Theorem

$\angle 1 \cong \angle 3$

Given

Corresponding Angles Postulate

Transitive Property of Congruence