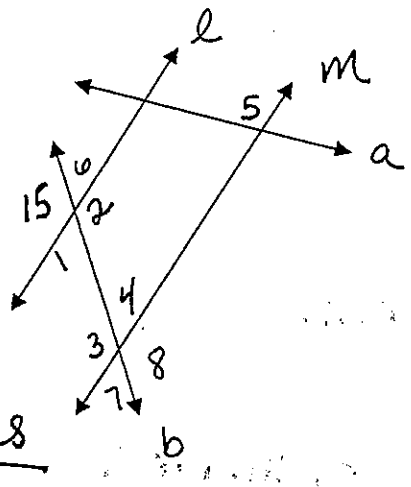
Name: KEY Period: _____

Given: $l \parallel m$
$m\angle 1 = 30°$
$m\angle 3 = m\angle 5$

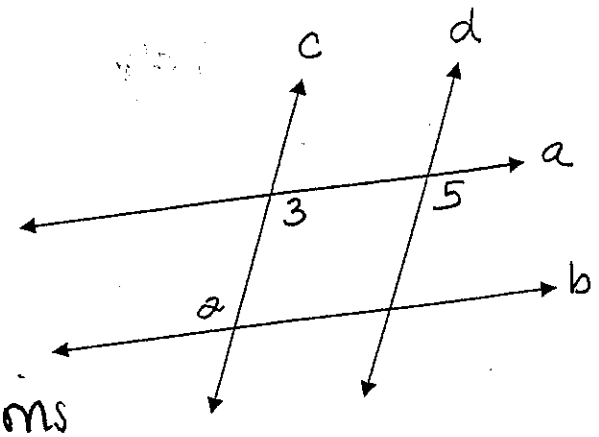
Prove: $m\angle 5 = 150°$



Statements	Justifications
1. $l \parallel m$	1. Given
2. $\angle 1$ & $\angle 3$ are same-side int $\angle$s	2. Def of same side int $\angle$s
3. $\angle 1$ & $\angle 3$ are supp. $\angle$s	3. same side int $\angle$s Thm
4. $m\angle 1 + m\angle 3 = 180°$	4. Def of supp $\angle$s
5. $m\angle 1 = 30°$	5. Given
6. $30° + m\angle 3 = 180°$	6. subst. Prop. of Eq.
7. $m\angle 3 = 150°$	7. sub. Prop. of Eq.
8. $m\angle 3 = m\angle 5$	8. Given
9. $m\angle 5 = 150°$	9. subst. Prop. of Eq.

Given: $a \parallel b$
$m\angle 2 = m\angle 5$

Prove: $c \parallel d$



Statements	Justifications
1. $a \parallel b$	1. Given
2. $\angle 2$ & $\angle 3$ are alt. int $\angle$s	2. Def. of alt. int $\angle$s
3. $\angle 2 \cong \angle 3$	3. Alt. Int $\angle$s Thm
4. $m\angle 2 = m\angle 3$ $m\angle 2 = m\angle 5$	4. Def. of cong. Angles Given
5. $m\angle 3 = m\angle 5$	5. Subst. Prop of Eq
6. $\angle 3 \cong \angle 5$	6. Def. of cong $\angle$s
7. $\angle 3$ & $\angle 5$ are corresp. $\angle$s	7. Def. of corr. $\angle$s
8. $c \parallel d$	8. Conv. of corr $\angle$s Post.