5. Given: ∠1 and ∠5 are Supplementary
   ∠1 and ∠4 are Supplementary

Prove: j ∥ k
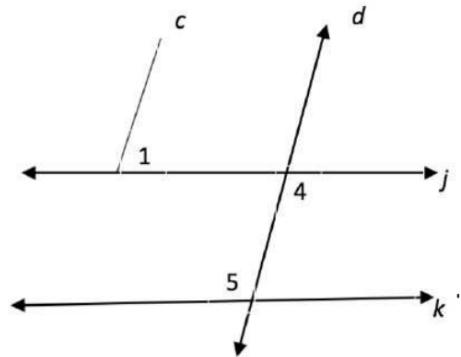
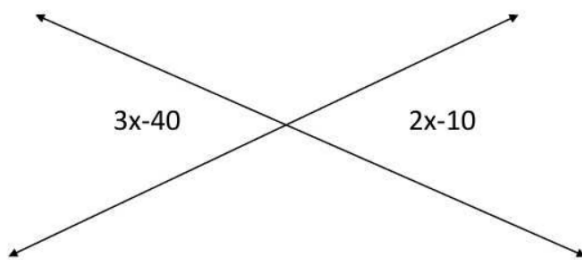| Statement	Reason
1) ∠1 + ∠5 are Supp. ∠1 + ∠4 are Supp.	1) Given
2) $m\angle 1 + m\angle 5 = 180$ $\boxed{m\angle 1 + m\angle 4} = 180$	2) Def of Supp ∠'s.
3) $m\angle 1 + m\angle 5 = m\angle 1 + m\angle 4$	3) Substitution
4) $m\angle 5 = m\angle 4$	4) Subtraction Prop.
5) j ∥ k	5) If Alternate Interior ∠'s are ≅ then lines are ∥.

4. Given: $\angle 5 \cong \angle 6$; $\angle 6 \cong \angle 4$

    Prove: $\overline{AD} \parallel \overline{BC}$
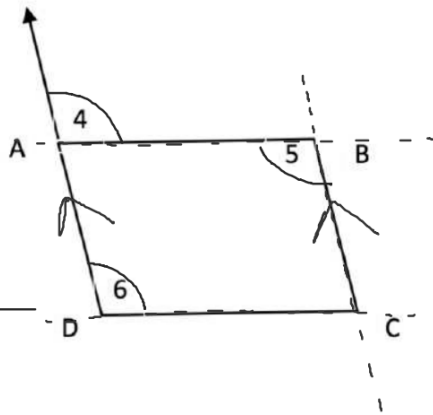
Statement	Reason
1) $\angle 5 \cong \angle 6$ $\angle 6 \cong \angle 4$	1) Given
2) $\angle 4 \cong \angle 5$	2) Substitution
3) $\overline{AD} \parallel \overline{BC}$	3) If Alternate Interior $\angle$'s are $\cong$ then the lines are $\parallel$.

Find the value of x.

3x-40   2x-10

$$3x - 40 = 2x - 10$$
$$+40 \qquad\qquad +40$$
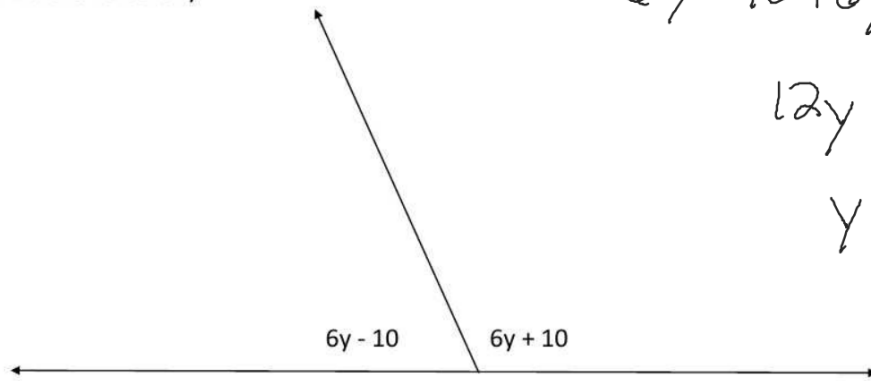
$$3x = 2x + 30$$
$$-2x \quad -2x$$

$$x = 30$$

Find the value of y.

6y - 10   6y + 10

$$6y - 10 + 6y + 10 = 180$$

$$12y = 180$$

$$y = 15$$