For the following proofs, provide a valid reason for every statement.

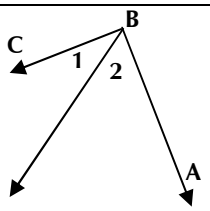
1. Given $\angle 1$ is a right angle
   $\angle 2$ is a right angle

   Prove $\angle 1 \cong \angle 2$

Statements	**Reasons**
1. $\angle 1$ is a right angle	1. Given
2. $\angle 2$ is a right angle	2. Given
3. $\angle 1 \cong \angle 2$	3. If 2 angles are right angles, then they are congruent.

2. Given $\angle ABC$ is a right angle

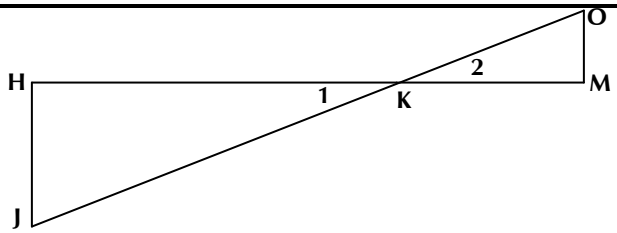
   Prove $\angle 1$ is complementary to $\angle 2$



Statements	**Reasons**
1. $\angle ABC$ is a right angle	1. Given
2. $m\angle ABC = 90°$	2. Definition of a right angle
3. $m\angle 1 + m\angle 2 = m\angle ABC$	3. Angle addition postulate
4. $m\angle 1 + m\angle 2 = 90°$	4. Substitution property of equality
5. $\angle 1$ is complementary to $\angle 2$	5. Definition of complementary angles

3. Given $\angle O$ is complementary to $\angle 2$
$\angle J$ is complementary to $\angle 1$

Prove $\angle O \cong \angle J$



Statements	**Reasons**
1. $\angle O$ is complementary to $\angle 2$	1. Given
2. $\angle J$ is complementary to $\angle 1$	2. Given
3. $\angle 1 \cong \angle 2$	3. Vertical angles theorem
4. $\angle O \cong \angle J$	4. Congruent complements theorem

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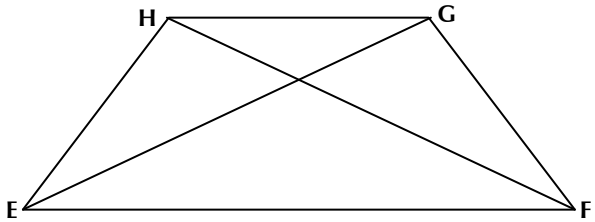
4. Given $\angle HEF$ is supplementary to $\angle EHG$
$\angle GFE$ is supplementary to $\angle FGH$
$\angle EHF \cong \angle FGE$
$\angle GHF \cong \angle HGE$

Prove $\angle HEF \cong \cancel{\angle HGE}$ $\angle HEF \cong \angle GFE$



Statements	**Reasons**
1. $\angle HEF$ is supplementary to $\angle EHG$	1. Given
2. $\angle GFE$ is supplementary to $\angle FGH$	2. Given
3. $\angle EHF \cong \angle FGE$	3. Given
4. $\angle GHF \cong \angle HGE$	4. Given
5. $\angle EHG \cong \angle FGH$	5. **<u>Addition property</u>** (if 2 congruent angles are added to 2 congruent angles, then their sums are congruent)
6. $\angle HEF \cong \cancel{\angle HGE}$ $\angle HEF \cong \angle GFE$	6. Congruent supplements theorem

SORRY FOR THE MISTAKE ! ! !