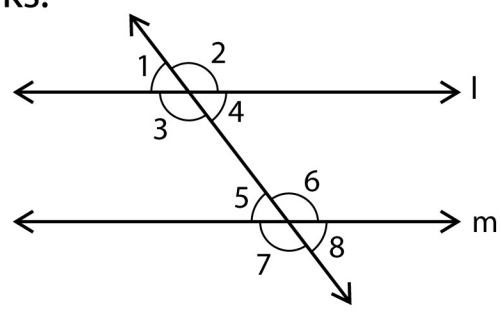


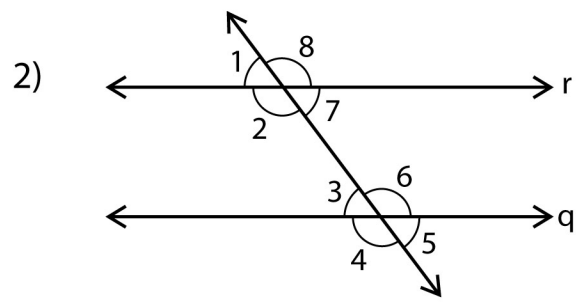
Proofs with Parallel Lines and Transversals

Fill in the blanks.

- 1) Given: $l \parallel m$
 Prove: $\angle 1$ and $\angle 6$ are Supplementary



Statement	Reason
1. $l \parallel m$	1. Given.
2. $\angle 1 \cong \angle 5$	2. _____
3. _____	3. Definition of corresponding angles.
4. $\angle 5$ and $\angle 6$ are a linear pair.	4. Definition of a linear pair.
5. _____	5. Linear pair theorem.
6. $m\angle 1 + m\angle 6 = 180^\circ$	6. _____
7. $\angle 1$ and $\angle 6$ are supplementary.	7. Definition of supplementary angles.



- Given: $r \parallel q$
 Prove: $m\angle 6 + m\angle 7 = 180^\circ$

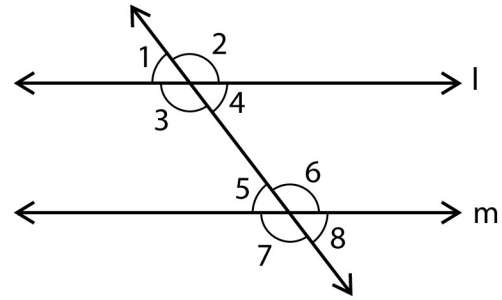
Statement	Reason
1. $r \parallel q$	1. Given.
2. $\angle 2$ and $\angle 7$ are a linear pair.	2. Definition of a linear pair.
3. _____	3. Linear pair theorem.
4. $\angle 2 \cong \angle 6$	4. _____
5. $m\angle 2 = m\angle 6$	5. _____
6. _____	6. Substitution property of equality.

Proofs with Parallel Lines and Transversals

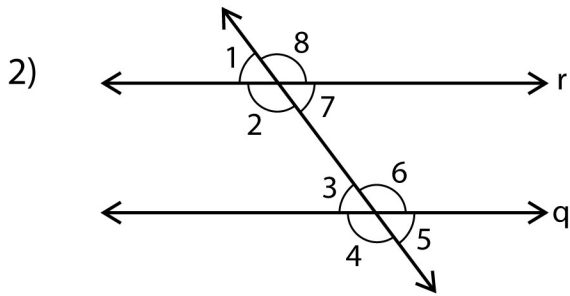
Answers

Given: $l \parallel m$

Prove: $\angle 1$ and $\angle 6$ are Supplementary



Statement	Reason
1. $l \parallel m$	1. Given.
2. $\angle 1 \cong \angle 5$	2. <u>Corresponding angle theorem.</u>
3. <u>$m\angle 1 = m\angle 5$</u>	3. Definition of corresponding angles.
4. $\angle 5$ and $\angle 6$ are a linear pair.	4. Definition of a linear pair.
5. <u>$m\angle 5 + m\angle 6 = 180^\circ$</u>	5. Linear pair theorem.
6. $m\angle 1 + m\angle 6 = 180^\circ$	6. <u>Substitution property of equality.</u>
7. $\angle 1$ and $\angle 6$ are supplementary.	7. Definition of supplementary angles.



Given: $r \parallel q$

Prove: $m\angle 6 + m\angle 7 = 180^\circ$

Statement	Reason
1. $r \parallel q$	1. Given.
2. $\angle 2$ and $\angle 7$ are a linear pair.	2. Definition of a linear pair.
3. <u>$m\angle 2 + m\angle 7 = 180^\circ$</u>	3. Linear pair theorem.
4. $\angle 2 \cong \angle 6$	4. <u>Alternate interior angle theorem.</u>
5. $m\angle 2 = m\angle 6$	5. <u>Definition of alternate interior angles.</u>
6. <u>$m\angle 6 + m\angle 7 = 180^\circ$</u>	6. Substitution property of equality.