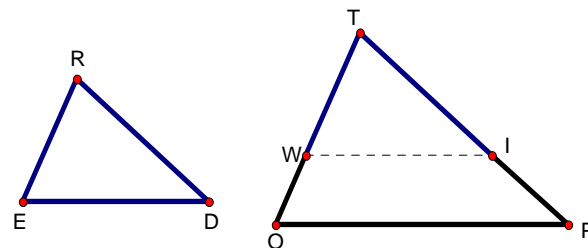


Proof of SSS~ Theorem:

Given: $\triangle RED$ and $\triangle TOP$ such that $\frac{ED}{OP} = \frac{RE}{TO} = \frac{RD}{TP}$

Prove: $\triangle RED \sim \triangle TOP$



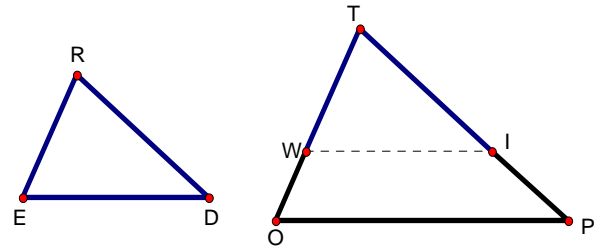
Proof:

Statements	Reasons
1. $\triangle RED$ and $\triangle TOP$ such that $\frac{ED}{OP} = \frac{RE}{TO} = \frac{RD}{TP}$	1. Given
2. Construct \overline{TW} on \overline{TO} such that $TW = RE$	2. Ruler Postulate
3. From W, draw $\overline{WI} \parallel \overline{OP}$	3. Parallel Postulate
4. $\angle T \cong \angle T$	4. Identity
5. $\angle TWI \cong \angle TOP$	5. ITPLACBAT, then corresponding angles are congruent.
6. $\triangle TWI \sim \triangle TOP$	6. AA
7. $\frac{WI}{OP} = \frac{TW}{TO} = \frac{TI}{TP}$	7. CSSTP
8. $\frac{WI}{OP} = \frac{RE}{TO} = \frac{TI}{TP}$	8. Substitution Hint: Refer to (2) and (7)
9. $ED = OP \cdot \frac{RE}{TO}$ (1); $WI = OP \cdot \frac{RE}{TO}$ (8)	9. Multiplication Property
10. $ED = WI$	10. Substitution
11. $RD = TP \cdot \frac{RE}{TO}$ (1); $TI = TP \cdot \frac{RE}{TO}$ (8)	11. Multiplication Property
12. $RD = TI$	12. Substitution
13. $\triangle RED \cong \triangle TWI$ (2), (10), (12)	13. SSS
14. $\triangle RED \sim \triangle TWI$	14. Congruent triangles are similar.
15. $\triangle RED \sim \triangle TOP$	15. Transitive Property of \sim .

Proof of SAS~ Theorem:

Given: $\triangle RED$ and $\triangle TOP$ such that

$$\angle R \cong \angle T \text{ and } \frac{RE}{TO} = \frac{RD}{TP}$$



Prove: $\triangle RED \sim \triangle TOP$

Proof:

Statements	Reasons
1. $\triangle RED$ and $\triangle TOP$ such that $\angle R \cong \angle T$ and $\frac{RE}{TO} = \frac{RD}{TP}$	1. Given
2. Construct \overline{TW} on \overline{TO} such that $TW = RE$	2. Ruler Postulate
3. From W, draw $\overline{WI} \parallel \overline{OP}$	3. Parallel Postulate
4. $\angle T \cong \angle T$	4. Identity
5. $\angle TWI \cong \angle TOP$	5. ITPLACBAT, then corresponding angles are congruent.
6. $\triangle TWI \cong \triangle TOP$	6. AA (4), (5)
7. $\frac{TW}{TO} = \frac{TI}{TP}$	7. CSSTP
8. $\frac{RE}{TO} = \frac{TI}{TP}$	8. Substitution Hint: Refer to (2) and (7)
9. $RD = TP \cdot \frac{RE}{TO}$ (1), $TI = TP \cdot \frac{RE}{TO}$ (8)	9. Multiplication Property
10. $RD = TI$	10. Substitution
11. $\triangle RED \cong \triangle TWI$ (1), (2), (10)	11. SAS
12. $\triangle RED \sim \triangle TWI$	12. Congruent triangles are similar.
13. $\triangle RED \sim \triangle TOP$	13. Transitive Property of \sim . (6), (12)