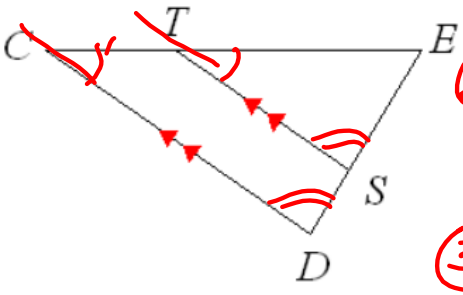
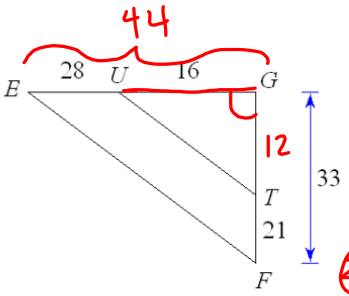
Geometry
Similiarity Proofs

Given: $\overline{TS} \parallel \overline{CD}$
Prove: $\Delta ECD \sim \Delta ETS$



Statements	Reasons
1) $\overline{TS} \parallel \overline{CD}$	1) Given
2) $\angle ECD \cong \angle ETS$ $\angle EST \cong \angle EDC$	2) Corr. $\angle$'s $\cong$ Post.
3) $\Delta ECD \sim \Delta ETS$	3) AA Sim

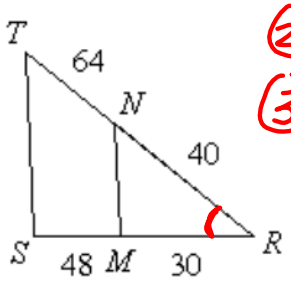
Given: the side lengths below
Prove: $\Delta EGF \sim \Delta UGT$



Stmts	reasons
1) EU = 28 UG = 16 TF = 21 GF = 33	1) Given
2) $\angle G \cong \angle G$	2) Reflexive
3) EG = 44 GT = 12	3) Segment Add. Post.
4) $\frac{GU}{GE} = \frac{16}{44} = \frac{4}{11}$ $\frac{GT}{GF} = \frac{12}{33} = \frac{4}{11}$	4) Def of Proportion
5) $\frac{GU}{GE} = \frac{GT}{GF}$	5) Trans.
6) $\Delta EGF \sim \Delta UGT$	6) SAS Sim

Given: $\frac{RN}{RT} = \frac{RM}{RS}$

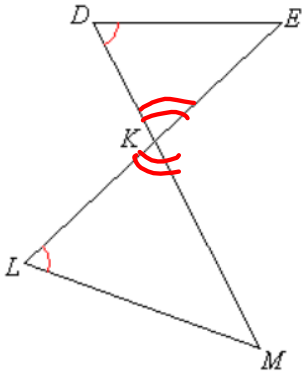
Prove: $\triangle RTS \sim \triangle RNM$



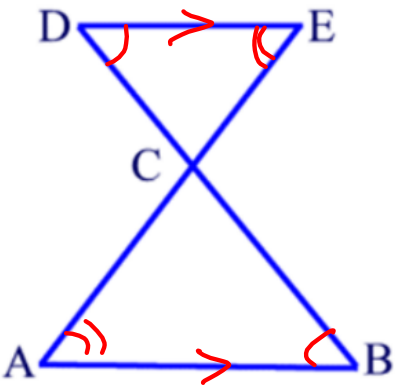
stmts	reasons
① $\frac{RN}{RT} = \frac{RM}{RS}$	① Given
② $\angle R \cong \angle R$	② Reflexive
③ $\triangle RTS \sim \triangle RNM$	③ SAS Sim

Given: $\angle D \cong \angle L$

Prove: $\triangle DEK \sim \triangle LMK$



stmts	reasons
① $\angle D \cong \angle L$	① Given
② $\angle DKE \cong \angle MKL$	② Vert $\angle$'s $\cong$ Thm
③ $\triangle DEK \sim \triangle LMK$	③ AA Sim

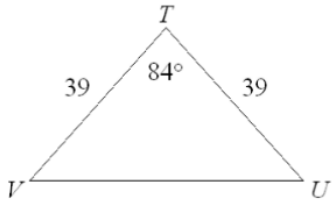


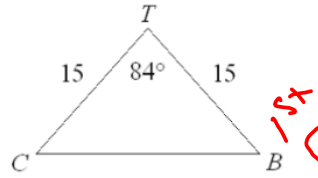
Given: $\overline{DE} \parallel \overline{BA}$

Prove: $\Delta DEC \sim \Delta BAC$

stmts	reasons
① $\overline{DE} \parallel \overline{BA}$	① Given
② $\angle D \cong \angle B$, $\angle E \cong \angle A$	② Alt. Int $\angle$'s $\cong$ thm
③ $\Delta DEC \sim \Delta BAC$	③ AA Sim

Put the pieces of the following proof in order.





Prove: $\Delta UTV \sim \Delta BTC$

1. $VT = 39; TU = 39$
   $CT = 15; TB = 15$
   $\angle VTU = 84°$
   $\angle CTB = 84°$
2. $\Delta UTV \sim \Delta BTC$
3. $\angle VTU \cong \angle CTB$
4. $\frac{VT}{CT} = \frac{39}{15}$
5. $\frac{VT}{CT} = \frac{TU}{TB}$
6. $\frac{TU}{TB} = \frac{39}{15}$

1st

A. SAS Similarity

B. Definition of Proportion

C. Definition of Proportion

D. Transitive

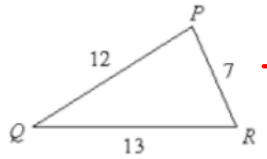
E. Transitive

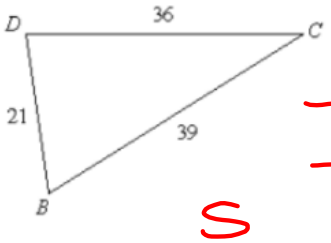
F. Given

S	R
1	F
4	B
6	C
5	D
3	E
2	A

Put the pieces of the following proof in order.

Prove: $\Delta RPQ \sim \Delta BDC$





1. $\Delta RPQ \sim \Delta BDC$
2. $\frac{BC}{RQ} = \frac{39}{13} = 3$
3. $\frac{BC}{RQ} = \frac{DB}{PR} = \frac{DC}{PQ}$
4. $PQ = 12; PR = 7; RQ = 13$
   $BC = 39; DC = 26; DB = 21$
5. $\frac{DB}{PR} = \frac{21}{7} = 3$
6. $\frac{DC}{PQ} = \frac{36}{12} = 3$

A. Definition of Proportion

B. Definition of Proportion

C. SSS Similarity

D. Transitive

E. Definition of Proportion

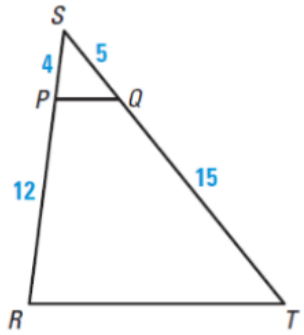
F. Given

S	R
4	F
2	A
5	B
6	E
3	D
1	C

Put the pieces of the following proof in order.

GIVEN ▶ $SP = 4, PR = 12, SQ = 5, QT = 15$

PROVE ▶ $\triangle RST \sim \triangle PSQ$



1. $\angle S \cong \angle S$
2. $SP = 4; PR = 12$
   $SQ = 5; ST = 15$
3. $\triangle RST \cong \triangle PSQ$
4. $\frac{SR}{SP} = \frac{SP + PR}{SP} = \frac{4 + 12}{4} = \frac{16}{4} = 4$
5. $\frac{SR}{SP} = \frac{ST}{SQ}$
6. $\frac{ST}{SQ} = \frac{SQ + QT}{SQ} = \frac{5 + 15}{5} = \frac{20}{5} = 4$

A. SAS Similarity

B. Reflexive

C. Definition of Proportion

D. Definition of Proportion

E. Given

F. Transitive

S	R
2	E
4	C
6	D
5	F
1	B
3	A