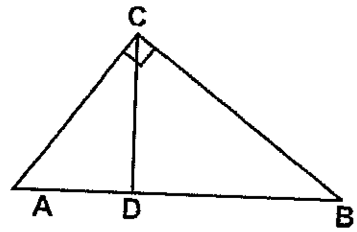
Name: ______________________________

1) Give a reason for each statement in the proof:



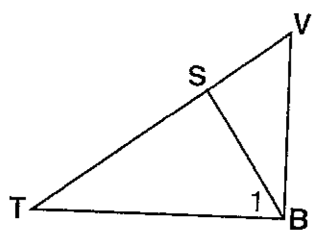
Given: In $\triangle ABC$, $\angle ACB$ is a right angle and $\overline{CD} \perp \overline{AB}$.

Prove: (a) $\triangle ABC \sim \triangle CBD$

(b) $\frac{AB}{BC} = \frac{BC}{BD}$

(c) $BC^2 = AB \times BD$

STATEMENTS	REASONS
(1) In $\triangle ABC$, $\angle ACB$ is a right angle, $\overline{CD} \perp \overline{AB}$.	(1)
(2) $\angle CDB$ is a right angle.	(2)
(3) $\angle ACB \cong \angle CDB$	(3)
(4) $\angle B \cong \angle B$	(4)
(5) $\triangle ABC \sim \triangle CBD$	(5)
(6) $\frac{AB}{BC} = \frac{BC}{BD}$	(6)
(7) $BC^2 = AB \times BD$	(7)

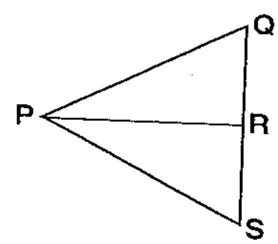


Given: $\overline{BS} \perp \overline{TV}$

$\angle 1 \cong \angle V$

Prove: $\triangle TSB \sim \triangle BSV$

3)

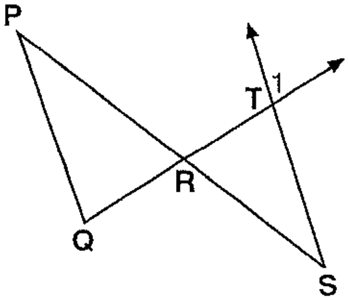


Given: $\overline{PQ} \cong \overline{PS}$

$\overline{PR}$ bisects $\angle QPS$

Prove: $\triangle PQR \sim \triangle PRS$

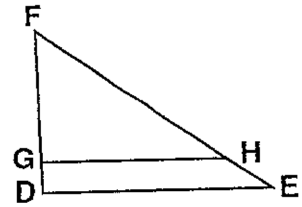
4)



Given: $\angle 1 \cong \angle Q$

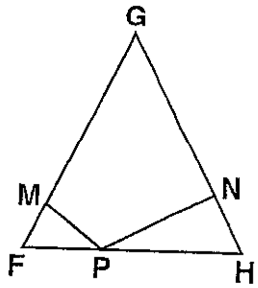
Prove: $\triangle QPR \sim \triangle TRS$

5)



Given: In $\triangle DEF$, $\overline{GH} \parallel \overline{DE}$

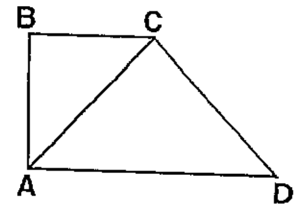
Prove: $\triangle FGH \sim \triangle FDE$



Given: In $\triangle FGH$, $\overline{FG} \cong \overline{GH}$
$\overline{PM} \perp \overline{FG}$
$\overline{PN} \perp \overline{GH}$

Prove: $\frac{FM}{NH} = \frac{FP}{PH}$

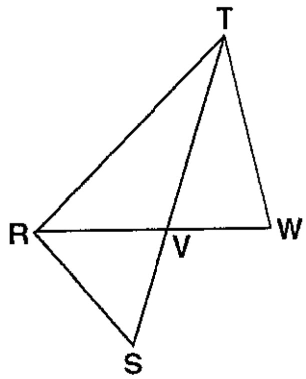
7)



Given: $\overline{AB} \perp \overline{BC}$
$\overline{AB} \perp \overline{AD}$
$\overline{AC} \perp \overline{CD}$

Prove: $\frac{AD}{AC} = \frac{AC}{BC}$

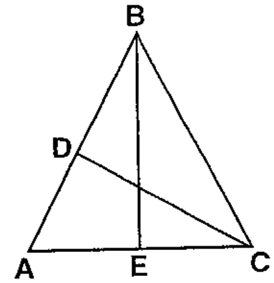
8)



Given: $\overline{RW}$ bisects $\angle TRS$
$\overline{TW} \cong \overline{TV}$

Prove: $RW \cdot SV = RV \cdot TW$

9)



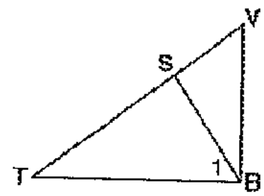
Given: In $\triangle ABC$, $\overline{AB} \cong \overline{BC}$
$\overline{BE} \perp \overline{AC}$
$\overline{CD} \perp \overline{AB}$

Prove: $BC \cdot DA = CA \cdot EC$

Name: ______________________________ Date: ________________

Similarity Proofs

1.

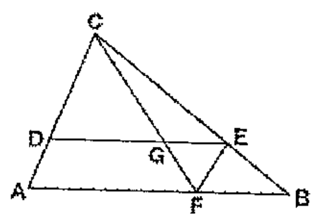


Given: $\overline{BS} \perp \overline{TV}$

$\angle 1 \cong \angle V$

Prove: $\triangle TSB \sim \triangle BSV$

2.



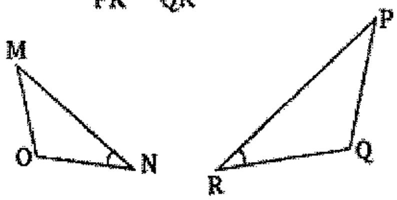
Given: $\overline{DE} \parallel \overline{AB}$

$\overline{EF} \parallel \overline{AC}$

Prove: $DG \cdot GF = EG \cdot GC$

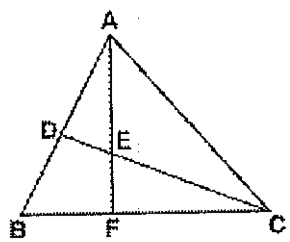
3.

Given: $\frac{MN}{PR} = \frac{ON}{QR}$, $\angle N \cong \angle R$



Prove: $\triangle MNO \sim \triangle PQR$

4.

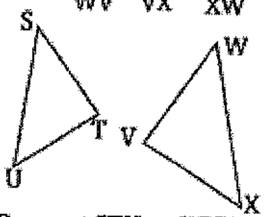


Given: $\overline{CD}$ and $\overline{AF}$ are altitudes of $\triangle ABC$

Prove: $CE \cdot ED = AE \cdot EF$

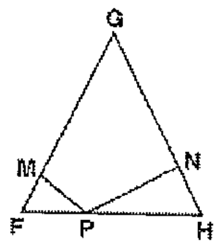
5.

Given: $\frac{ST}{WV} = \frac{TU}{VX} = \frac{US}{XW}$



Prove: $\triangle STU \sim \triangle WVX$

6.



Given: In $\triangle FGH$, $\overline{FG} \cong \overline{GH}$

$\overline{PM} \perp \overline{FG}$

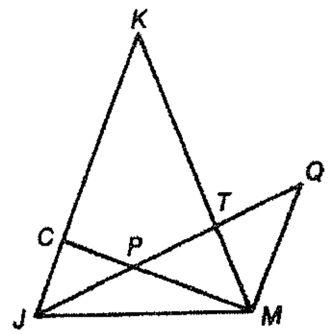
$\overline{PN} \perp \overline{GH}$

Prove: $\frac{FM}{NH} = \frac{FP}{PH}$

7.

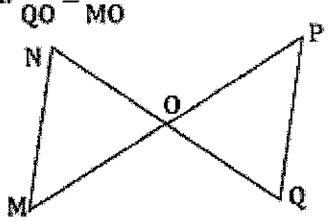
GIVEN: $\overline{MC} \perp \overline{JK}$, $\overline{PM} \perp \overline{MQ}$, $\overline{TP} \cong \overline{TM}$.

PROVE: $\dfrac{PM}{MC} = \dfrac{PQ}{MK}$.



8.

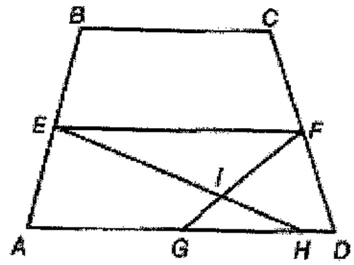
Given: $\dfrac{NO}{QO} = \dfrac{PO}{MO}$



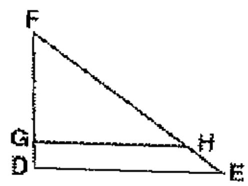
Prove: $\triangle MNO \sim \triangle PQO$

9.

GIVEN: $\overline{EF} \parallel \overline{AD}$
PROVE: $EI \times GH = IH \times EF$.



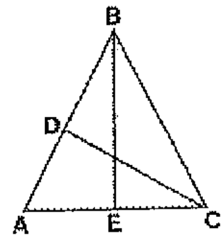
10.



Given: In $\triangle DEF$, $\overline{GH} \parallel \overline{DE}$

Prove: $\triangle FGH \sim \triangle FDE$

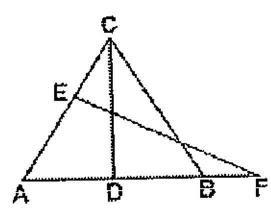
11



Given: In $\triangle ABC$, $\overline{AB} \cong \overline{BC}$
$\overline{BE} \perp \overline{AC}$
$\overline{CD} \perp \overline{AB}$

Prove: $BC \cdot DA = CA \cdot EC$

12.

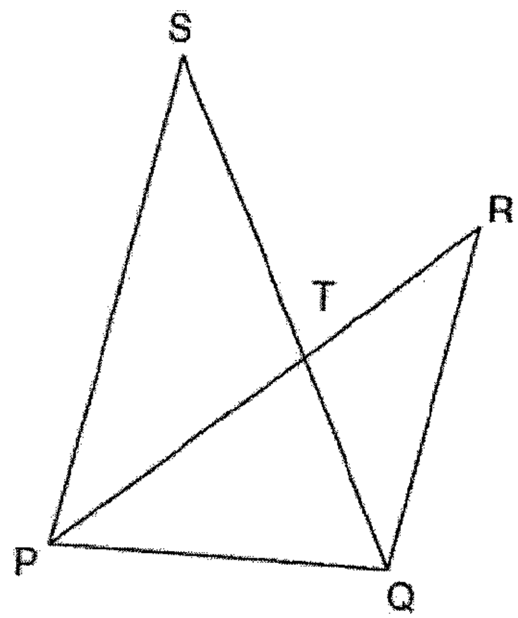


Given: In $\triangle ABC$, $\overline{AC} \cong \overline{CB}$
$\overline{CD} \perp \overline{AB}$
$\overline{FE} \perp \overline{AC}$

Prove: $EA \cdot CB = AF \cdot DB$

13.

In the diagram below, $\overline{SQ}$ and $\overline{PR}$ intersect at T, $\overline{PQ}$ is drawn, and $\overline{PS} \parallel \overline{QR}$.



What technique can be used to prove that $\Delta PST \sim \Delta RQT$?

1) SAS
2) SSS
3) ASA
4) AA

14.

In ΔABC and ΔDEF, $\frac{AC}{DF} = \frac{CB}{FE}$. Which additional information would prove $\Delta ABC \sim \Delta DEF$?

1) $AC = DF$
2) $CB = FE$
3) $\angle ACB \cong \angle DFE$
4) $\angle BAC \cong \angle EDF$

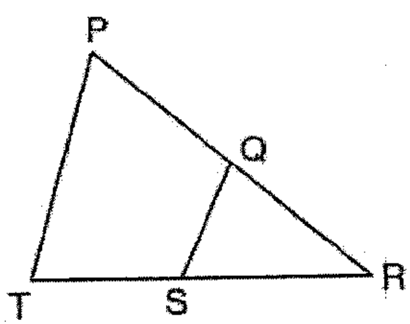
15.

In triangles ABC and DEF, $AB = 4$, $AC = 5$, $DE = 8$, $DF = 10$, and $\angle A \cong \angle D$. Which method could be used to prove $\Delta ABC \sim \Delta DEF$?

1) AA
2) SAS
3) SSS
4) ASA

16.

In the diagram below of ΔPRT, Q is a point on $\overline{PR}$, S is a point on $\overline{TR}$, $\overline{QS}$ is drawn, and $\angle RPT \cong \angle RSQ$.

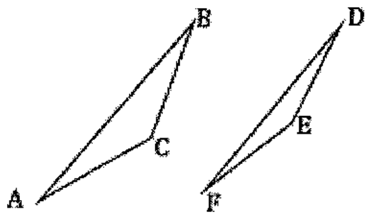


Which reason justifies the conclusion that $\Delta PRT \sim \Delta SRQ$?

1) AA
2) ASA
3) SAS
4) SSS

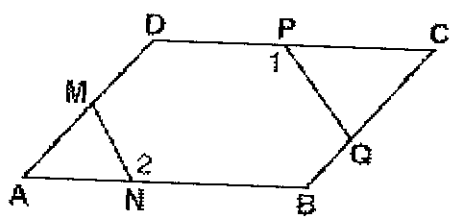
17.

Given: $\frac{AB}{FD} = \frac{BC}{DE} = \frac{CA}{EF}$



Prove: $\triangle ABC \sim \triangle FDE$

18.

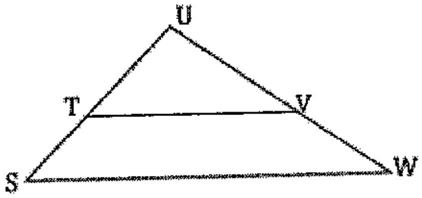


Given: $\overline{MN} = 3$
$\overline{PQ} = 6$
$\overline{AN} = 2$
$\overline{PC} = 4$
$\angle 1 \cong \angle 2$

Prove: $\frac{MN}{PQ} = \frac{AN}{PC}$

19.

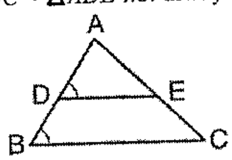
Given: ∠S≅∠UTV

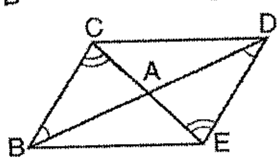


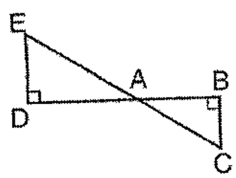
Prove: △SUW~△TUV

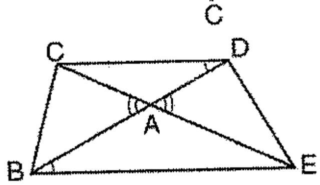
20.

For which diagram is the statement $\Delta ABC \sim \Delta ADE$ *not* always true??

1) 

2) 

3) 

4) 

21.

The diagram below shows ΔABC, with $\overline{AEB}$, $\overline{ADC}$, and $\angle ACB \cong \angle AED$. Prove that ΔABC is similar to ΔADE.