

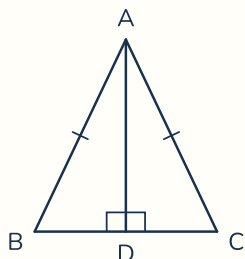
Geometry — Congruence proofs

Name: _____

Date: _____

Read each proof and choose the missing reason.

1



Given $AB \cong AC$; $AD \perp BC$

Prove $\triangle ABD \cong \triangle ACD$

Statements

Reasons

1. $\angle ADB$ and $\angle ADC$ are right angles

?

2. $AB \cong AC$

Given

3. $AD \cong AD$

Reflexive Property

4. $\triangle ABD \cong \triangle ACD$

HL

Reason for step 1:

Given

Reflexive Property

Vertical Angles

Alternate Interior Angles

Definition of Midpoint

SSS

SAS

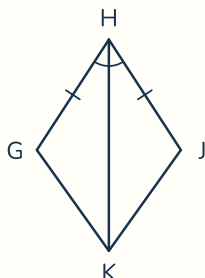
ASA

AAS

HL

Definition of Perpendicular

2



Given $GH \cong JH$; $\angle GHK \cong \angle JHK$

Prove $\triangle GHK \cong \triangle JHK$

Statements

Reasons

1. $GH \cong JH$

Given

2. $\angle GHK \cong \angle JHK$

Given

3. $HK \cong HK$

Reflexive Property

4. $\triangle GHK \cong \triangle JHK$

?

Reason for step 4:

Given

Reflexive Property

Vertical Angles

Alternate Interior Angles

Definition of Midpoint

SSS

SAS

ASA

AAS

HL

Definition of Perpendicular



Congruence proofs — Answer key

1. $\triangle ABD \cong \triangle ACD$ ($AB \cong$
 AC , $AD \perp BC$), step 1:
Definition of Perpendicular

2. $\triangle GHK \cong \triangle JHK$ ($GH \cong JH$,
 $\angle GHK \cong \angle JHK$), step 4: SAS

