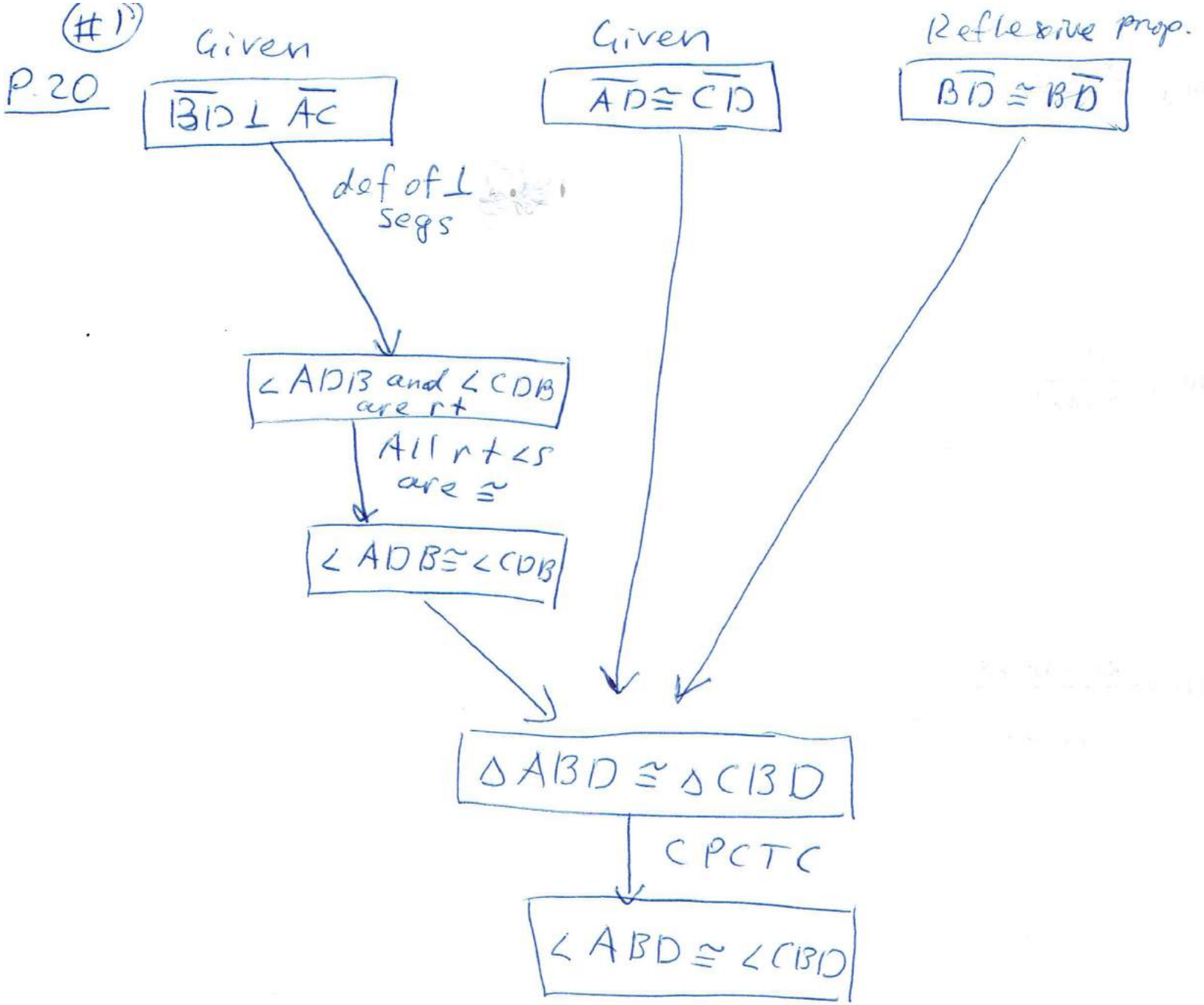
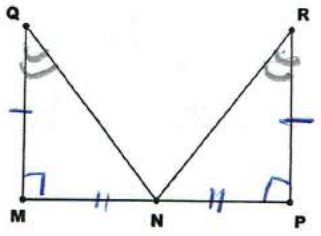
(#1)

P. 20


Given
$\overline{BD} \perp \overline{AC}$
Given
$\overline{AD} \cong \overline{CD}$
Reflexive Prop.
$\overline{BD} \cong \overline{BD}$
def of ⊥ segs
$\angle ADB$ and $\angle CDB$ are rt
All rt $\angle$s are $\cong$
$\angle ADB \cong \angle CDB$
$\triangle ABD \cong \triangle CBD$
CPCTC
$\angle ABD \cong \angle CBD$

Practice with Proof

Ex 1) Given: $\overline{MQ} \cong \overline{PR}$, <M and <P are right angles.
N is the midpoint of $\overline{MP}$
Prove: <MQN ≅ <PRN



Given | Given | Given

(S) $\overline{MQ} \cong \overline{PR}$ | <M and <P are right angles | N is the midpoint of $\overline{MP}$

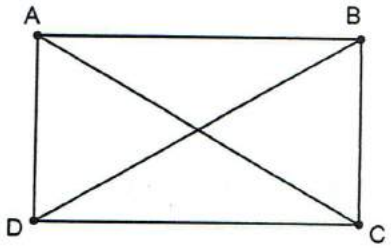
All rt <s are ≅ | def of midpt

(A) $\angle M \cong \angle P$ | (S) $\overline{MN} \cong \overline{NP}$

$\Delta QMN \cong \Delta RPN$

CPCTC

<MQN ≅ <PRN



Ex 2) Given: $\overline{AD} \cong \overline{BC}$
<ADC ≅ < BCD
Prove: $\overline{AC} \cong \overline{BD}$

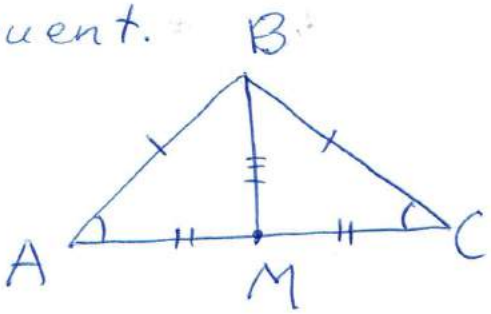
Reflexive Prop ≅

$\overline{AD} \cong \overline{BC}$ | <ADC ≅ < BCD |

Δ_____ ≅ Δ _____

(I)sosceles (T)riangle (T)heorem

If two sides of a triangle are congruent, then the angles opposite to these sides are congruent.



ITT

Given

(S) $\overline{AB} \cong \overline{BC}$

M is midpt of $\overline{AC}$

def of midpt

(S) $\overline{AM} \cong \overline{MC}$

Reflexive prop

(S) $\overline{BM} \cong \overline{BM}$

SSS

$\triangle ABM \cong \triangle CBM$

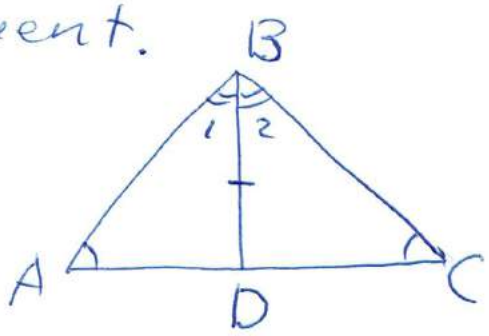
CPCTC

$\angle A \cong \angle C$

ITT Converse

If two angles of a triangle are congruent, then the sides opposite those angles are congruent.

ITT Converse



Given:
$\angle A \cong \angle C$
Pr: $\overline{AB} \cong \overline{BC}$

BD bisects $\angle ABC$

(A) $\angle A \cong \angle C$

(A) $\angle 1 \cong \angle 2$

Reflexive prop

(S) $\overline{BD} \cong \overline{BD}$

$\triangle ABD \cong \triangle CBD$

↓ CPCTC

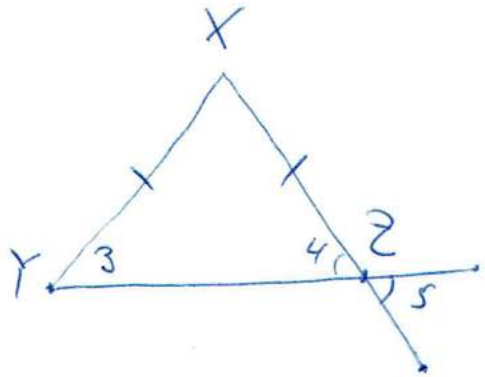
$\overline{AB} \cong \overline{BC}$

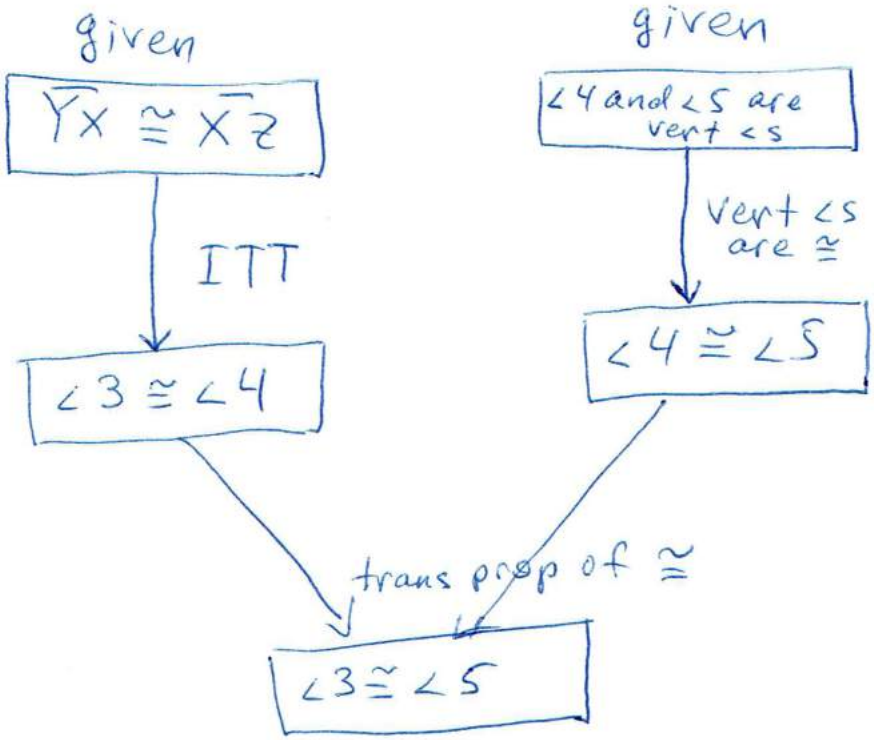
P24

(#1)

Given: $\overline{YX} \cong \overline{XZ}$

Prove: $\angle 3 \cong \angle 5$





#3

P24

given

given

(S) $\overline{AB} \cong \overline{CD}$

(S) $\overline{AP} \cong \overline{PD}$

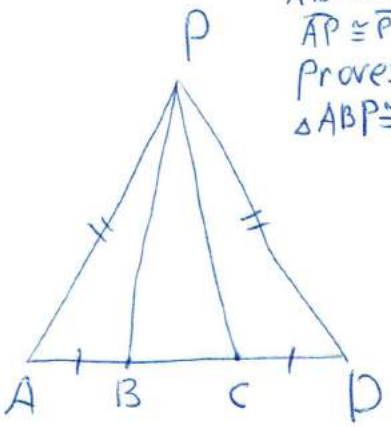
ITT

(A) $\angle A \cong \angle D$

$\triangle ABP \cong \triangle DCP$

Given: $\overline{AB} \cong \overline{CD}$, $\overline{AP} \cong \overline{PD}$

Prove: $\triangle ABP \cong \triangle DCP$



#5

given

given

$\angle 1 \cong \angle 2$

M is midpt. $\overline{JK}$

ITT converse

def of midpt

$\overline{JG} \cong \overline{JM}$

$\overline{JM} \cong \overline{MK}$

Trans. prop

$\overline{JG} \cong \overline{MK}$