Name: Key Date: _____

UNIT 3 **REVIEW**

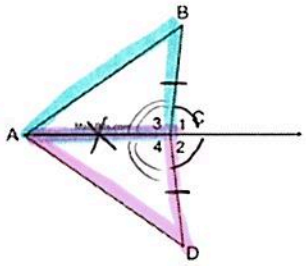
REVIEW #1: CUT-OUT PROOFS

Directions: Match the statements and reasons for each proof. Write the full proof in this packet.

EXAMPLE #1: PINK

Given: $\overline{BC} \cong \overline{CD}$
$\measuredangle 1 \cong \measuredangle 2$

S ✓
A ✓
S ✓



Prove: $\measuredangle BAC \cong \measuredangle DAC$ → CPCTC
1st $\triangle BAC \cong \triangle DAC$

STATEMENT	REASON
① $\overline{BC} \cong \overline{CD}$ ✓ (S) $\measuredangle 1 \cong \measuredangle 2$	① Given
② $\measuredangle 1 + \measuredangle 3 = 180°$ $\measuredangle 2 + \measuredangle 4 = 180°$	② Linear pairs are supplementary
③ $\measuredangle 3 \cong \measuredangle 4$ ✓ (A)	③ Supplements of $\cong$ $\measuredangle$'s are $\cong$
④ $\overline{AC} \cong \overline{AC}$ ✓ (S)	④ Reflexive Property
⑤ $\triangle BAC \cong \triangle DAC$	⑤ SAS $\cong$ SAS
⑥ $\measuredangle BAC \cong \measuredangle DAC$	⑥ CPCTC

EXAMPLE #2: BLUE

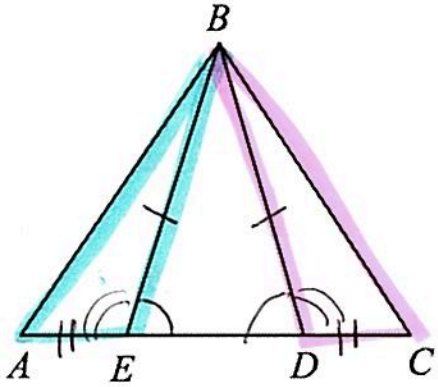
Given: $\overline{BE} \cong \overline{BD}$ & $\overline{AE} \cong \overline{CD}$ ③

Prove: $\triangle ABC$ *is isosceles*

② Need: $\angle A \cong \angle C$ by CPCTC

① Need: $\triangle ABE \cong \triangle CBD$

SV ✓
A ✓
S



STATEMENT	REASON
① $\overline{BE} \cong \overline{BD}$ ✓ (S), $\overline{AE} \cong \overline{CD}$ ✓ (S)	① Given
② $\triangle BED$ is isosceles	② Isosceles $\triangle$'s have $\angle \cong$ sides
③ $\angle BED \cong \angle BDE$	③ Isosceles $\triangle$'s have $\angle \cong$ base $\angle$'s
④ $\angle BED + \angle BEA = 180°$ $\angle BDE + \angle BDC = 180°$	④ Linear pairs are supplementa
⑤ $\angle BEA \cong \angle BDC$ ✓ (A)	⑤ Supplements of $\cong \angle$'s are $\cong$
⑥ $\triangle ABE \cong \triangle CBD$	⑥ SAS $\cong$ SAS
⑦ $\angle A \cong \angle C$	⑦ CPCTC
⑧ $\triangle ABC$ is isosceles	⑧ Isosceles $\triangle$'s have $\angle \cong$ base $\angle$'s

EXAMPLE #3: GREEN

Given: $\overline{CB} \perp \overline{DA}$

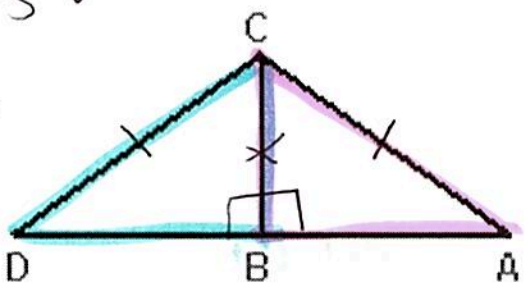
$\overline{DC} \cong \overline{AC}$ (3)

Prove: *B is the midpont of* $\overline{DA}$

(2) ↳ $\overline{DB} \cong \overline{BA}$ by CPCTC

(1) ↳ $\triangle CBD \cong \triangle CBA$ by HL

Right △'s ✓
H ✓
L ✓



STATEMENT	REASON
(1) $\overline{CB} \perp \overline{DA}$, $\overline{DC} \cong \overline{AC}$ ✓ (H)	(1) Given
(2) $\overline{CB} \cong \overline{CB}$ ✓ (L)	(2) Reflexive property
(3) ∠CBD and ∠CBA are right ∠'s	(3) ⊥ lines form right ∠'s
(4) △CBD and △CBA are right △'s ✓ (right △'s)	(4) Right △'s have 1 right ∠
(5) $\triangle CBD \cong \triangle CBA$	(5) HL ≅ HL
(6) $\overline{DB} \cong \overline{BA}$	(6) CPCTC
(7) B is the midpoint of $\overline{DA}$	(7) A midpoint creates 2 ≅ segments

EXAMPLE #4: YELLOW ★ ISOSCELES Δ's ★

Given: $\measuredangle H \cong \measuredangle J$

K *is the midpoint of* $\overline{HJ}$

$\overline{IF} \cong \overline{IG}$

Prove: $\overline{FK} \cong \overline{GK}$ → CPCTC

↳ $\Delta FHK \cong \Delta GJK$

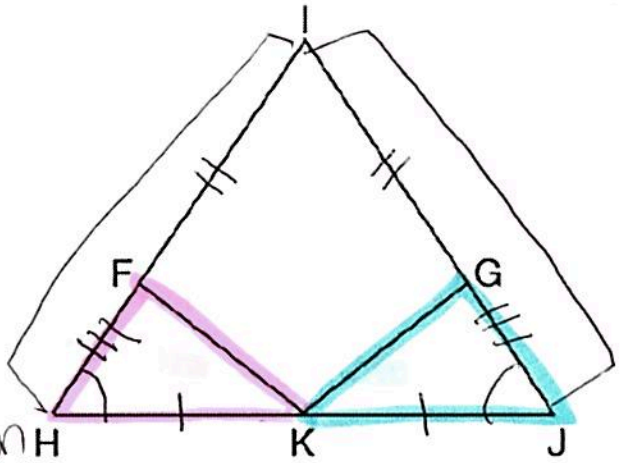
S ✓

A ✓

★ S ✓

↓

subtraction property



STATEMENT	REASON
① $\measuredangle H \cong \measuredangle J$ ✓(A) K is the midpoint of $\overline{HJ}$ $\overline{IF} \cong \overline{IG}$	① Given
② $\overline{HK} \cong \overline{KJ}$ ✓(S)	② A midpoint creates 2 ≅ segments
③ ΔHIJ is isosceles	③ isosceles Δ's have 2 ≅ base ∠'s
④ $\overline{IH} \cong \overline{IJ}$	④ isosceles Δ's have 2 ≅ sides
⑤ $\overline{FH} \cong \overline{GJ}$ ✓(S) $FH = IH - IF$ $GJ = IJ - IG$	⑤ subtraction property
⑥ $\Delta FHK \cong \Delta GJK$	⑥ SAS ≅ SAS
⑦ $\overline{FK} \cong \overline{GK}$	⑦ CPCTC

EXAMPLE #5: GRAY

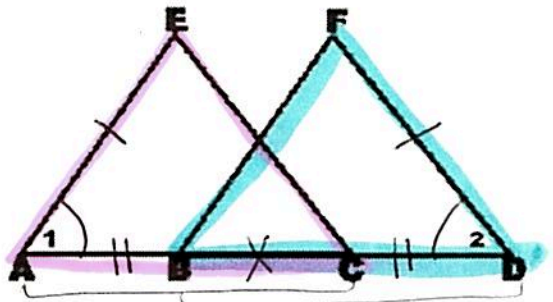
Given: $\overline{AE} \cong \overline{DF}$

$\measuredangle 1 \cong \measuredangle 2$

$\overline{AB} \cong \overline{CD}$

Prove: $\Delta AEC \cong \Delta BFD$

S ✓
A ✓
*S ✓
↓
addition property



STATEMENT	REASON
① $\overline{AE} \cong \overline{DF}$ ✓(S), $\measuredangle 1 \cong \measuredangle 2$ ✓(A) $\overline{AB} \cong \overline{CD}$	① Given
② $\overline{BC} \cong \overline{BC}$	② Reflexive Property
③ $\overline{AC} \cong \overline{BD}$ ✓(S) $\overline{AC} = \overline{AB} + \overline{BC}$ $\overline{BD} = \overline{DC} + \overline{BC}$	③ Addition Property
④ $\Delta AEC \cong \Delta BFD$	④ SAS $\cong$ SAS