CROSS-EXAMINATION: CARD SET A

Given: $9x - 6 = 5x + 24$
Prove: $x = 7.5$

Statement:	Reason:
1.	1. Given
2.	2. Subtraction Property
3.	3. Addition Property
4. $x = 7.5$	4.

CROSS-EXAMINATION: CARD SET A

Given: $3(x+1)=5+x$

Prove: $x=1$

Statement:	Reason:
1. $3(x+1)=5+x$	1.
2.	2. Distributive Property
3. $2x+3=5$	3.
4. $2x=2$	4. Subtractive Property
5. $x=1$	5.

CROSS-EXAMINATION: CARD SET A

Given: $\frac{x}{6} + 2 = 9$

Prove: $x = 42$

Statement:	Reason:
1. $\frac{x}{6} + 2 = 9$	1.
2. $x + 12 = 54$	2. Multiplication Property
3.	3.

CROSS-EXAMINATION: CARD SET A

Given: $3(7-x)=-x+2x+37$

Prove: $x=-4$

Statement:	Reason:
1. $3(7-x)=-x+2x+37$	1. Given
2. $21-3x=-x+2x+37$	2.
3.	3. Distributive Property
4.	4.
5.	5. Subtraction Property
6. $x=-4$	6.

CROSS-EXAMINATION: CARD SET A

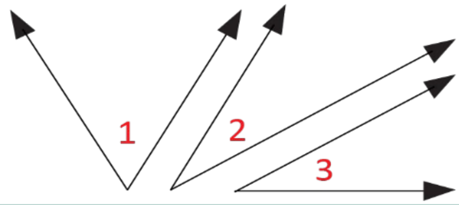
A) Given	F) Division Property	K) Addition Property
A) Given	F) Division Property	L) Subtraction Property
B) Distributive Property	F) Division Property	L) Subtraction Property
C) $21 = 4x + 37$	G) $-16 = 4x$	M) $x = 42$
D) $9x - 6 = 5x + 24$	H) $3x + 3 = 5 + x$	N) $4x - 6 = 24$
E) $21 - 3x = x + 37$	J) $4x = 30$	

CROSS-EXAMINATION: CARD SET B

Given: $\angle 1$ is a Complement of $\angle 2$

$\angle 2 \cong \angle 3$

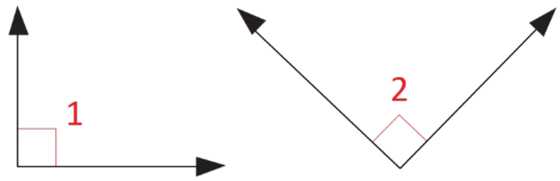
Prove: $\angle 1$ is a Complement of $\angle 3$



Statement:	Reason:
1. $\angle 1$ is a Complement of $\angle 2$	1.
2.	2. Given
3. $m\angle 1 + m\angle 2 = 90°$	3.
4.	4. Definition of Congruent Angles
5. $m\angle 1 + m\angle 3 = 90°$	5.
6. $\angle 1$ is a Complement of $\angle 3$	6. Definition of Complementary Angles

CROSS-EXAMINATION: CARD SET B

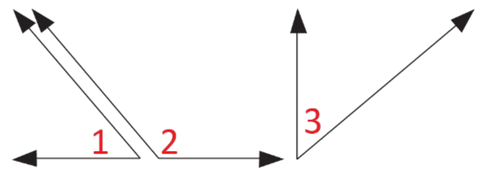
Given: $\angle 1$ and $\angle 2$ are Right Angles
Prove: $\angle 1 \cong \angle 2$



Statement:	Reason:
1. $\angle 1$ and $\angle 2$ are Right Angles	1. Given
2. $m\angle 1 = 90°$	2.
3.	3. Definition of Right Angles
4.	4.
5. $\angle 1 \cong \angle 2$	5. Definition of Congruent Angles

CROSS-EXAMINATION: CARD SET B

Given: $\angle 1$ and $\angle 2$ are Supplementary
$\angle 3$ and $\angle 2$ are Supplementary
Prove: $\angle 1 \cong \angle 3$

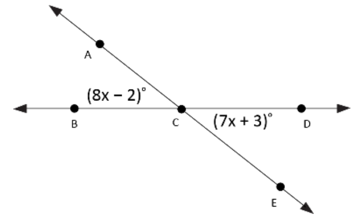


Statement:	Reason:
1.	1. Given
2. $\angle 3$ and $\angle 2$ are Supplementary	2.
3. $m\angle 1 + m\angle 2 = 180°$	3. Definition of Supplementary Angles
4. $m\angle 3 + m\angle 2 = 180°$	4.
5.	5. Transitive Property
6. $m\angle 1 = m\angle 3$	6.
7.	7. Definition of Congruent Angles

CROSS-EXAMINATION: CARD SET B

Given: $\angle ACB$ and $\angle DCE$ are Vertical Angles

Prove: $x = 5$



Statement:	Reason:
1. $\angle ACB$ and $\angle DCE$ are Vertical Angles	1. Given
2. $m\angle ACB = m\angle DCE$	2.
3.	3. Substitution Property
4.	4. Subtraction Property
5. $x = 5$	5. Addition Property

CROSS-EXAMINATION: CARD SET B

A) Given	F) Substitution Property	L) Vertical Angles Theorem
A) Given	F) Subtraction Property	M) Definition of Right Angles
B) $m\angle 2 = 90°$	G) Transitive Property	N) Definition of Complementary Angles
C) $\angle 1 \cong \angle 3$	H) $\angle 1$ and $\angle 2$ are Supplementary	P) Definition of Supplementary Angles
D) $8x - 2 = 7x + 3$	J) $x - 2 = 3$	Q) $m\angle 1 = m\angle 2$
E) $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 2$	K) $\angle 2 \cong \angle 3$	R) $m\angle 2 = m\angle 3$

CROSS-EXAMINATION: CARD SET C

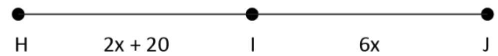
Given: $\overline{CD} = \overline{EF}$
Prove: $\overline{CE} = \overline{DF}$

Statement:	Reason:
1. $\overline{CD} = \overline{EF}$	1. Given
2. $\overline{CD} + \overline{DE} = \overline{EF} + \overline{DE}$	2.
3. $\overline{CD} + \overline{DE} = \overline{CE}$	3.
4.	4.
5. $\overline{CE} = \overline{DF}$	5. Transitive Property

CROSS-EXAMINATION: CARD SET C

Given: I is the Midpoint of $\overline{HJ}$

Prove: $x = 5$



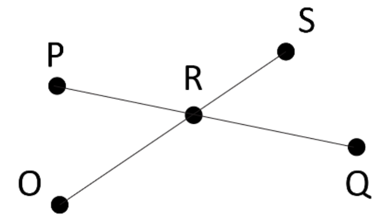
Statement:	Reason:
1. I is the Midpoint of $\overline{HJ}$	1.
2. $\overline{HI} \cong \overline{IJ}$	2. Definition of Midpoint
3. $\overline{HI} = \overline{IJ}$	3.
4. $2x + 20 = 6x$	4.
5. $20 = 4x$	5. Subtraction Property
6. $x = 5$	6.

CROSS-EXAMINATION: CARD SET C

Given: $\overline{PR} \cong \overline{RS}$

$\overline{OS}$ bisects $\overline{PQ}$

Prove: $\overline{RS} \cong \overline{RQ}$



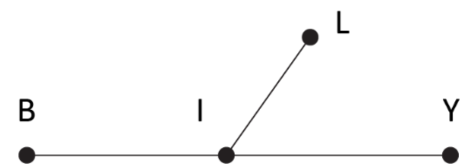
Statement:	Reason:
1. $\overline{PR} \cong \overline{RS}$	1. Given
2.	2. Given
3. $\overline{PR} = \overline{RS}$	3.
4.	4.
5. $\overline{RS} = \overline{RQ}$	5. Transitive Property
6.	6.

CROSS-EXAMINATION: CARD SET C

Given: I is the Midpoint of $\overline{BY}$

$\overline{IY} = \overline{IL}$

Prove: $\overline{IL} = \overline{IB}$



Statement:	Reason:
1.	1. Given
2. $\overline{IY} = \overline{IL}$	2.
3.	3.
4. $\overline{BI} = \overline{IL}$	4.
5. $\overline{IL} = \overline{BI}$	5. Symmetric Property
6.	6. Reflexive Property

CROSS-EXAMINATION: CARD SET C

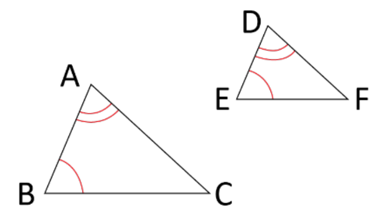
A) Given	F) Definition of Midpoint	L) Definition of Segment Bisector
A) Given	G) Definition of Congruent Segments	M) Addition Property
B) Segment Addition Postulate	G) Definition of Congruent Segments	N) Transitive Property
B) Segment Addition Postulate	G) Definition of Congruent Segments	P) Division Property
C) I is the midpoint of $\overline{BY}$	H) $\overline{DE} + \overline{EF} = \overline{DF}$	Q) Substitution Property
D) $\overline{RS} \cong \overline{RQ}$	J) $\overline{OS}$ bisects $\overline{PQ}$	R) $\overline{PR} = \overline{RQ}$
E) $\overline{IL} = \overline{IB}$	K) $\overline{BI} = \overline{IY}$	

CROSS-EXAMINATION: CARD SET D

Given: $\angle A \cong \angle D$

$\angle B \cong \angle E$

Prove: $\triangle ABC \sim \triangle DEF$



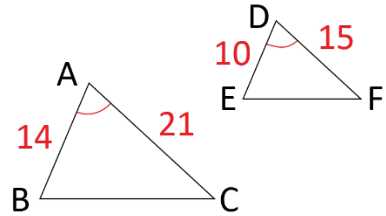
Statement:	Reason:
1. $\angle A \cong \angle D$	1.
2. $\angle B \cong \angle E$	2.
3. $\triangle ABC \sim \triangle DEF$	3.

CROSS-EXAMINATION: CARD SET D

Given: $\angle A \cong \angle D$

$$\frac{10}{14} = \frac{15}{21} \text{(proportional)}$$

Prove: $\triangle ABC \sim \triangle DEF$

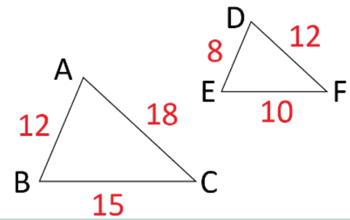


Statement:	Reason:
1. $\angle A \cong \angle D$	1. Given
2.	2. Given
3. $\triangle ABC \sim \triangle DEF$	3.

CROSS-EXAMINATION: CARD SET D

Given: $\frac{8}{12}=\frac{10}{15}=\frac{12}{18}$ (proportional)

Prove: $\triangle ABC \sim \triangle DEF$



Statement:	Reason:
1. $\frac{8}{12}=\frac{10}{15}=\frac{12}{18}$ (proportional)	1.
2. $\triangle ABC \sim \triangle DEF$	2.

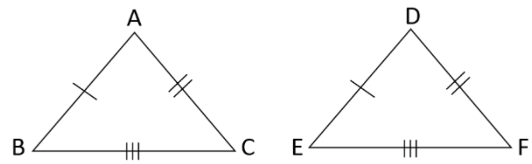
CROSS-EXAMINATION: CARD SET D

A) Given	B) SSS~ Theorem	D) AA~ Theorem
A) Given	C) SAS~ Theorem	E) $\frac{10}{14} = \frac{15}{21}$
A) Given		

CROSS-EXAMINATION: CARD SET E

Given: $\overline{AB} \cong \overline{DE}$, $\overline{AC} \cong \overline{DF}$,
and $\overline{BC} \cong \overline{EF}$

Prove: $\triangle ABC \cong \triangle DEF$

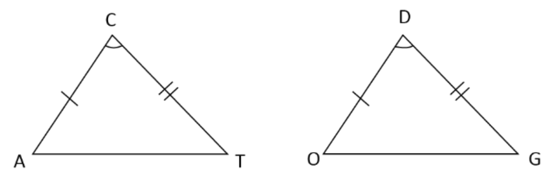


Statement:	Reason:
1. $\overline{AB} \cong \overline{DE}$	1.
2. $\overline{AC} \cong \overline{DF}$	2.
3. $\overline{BC} \cong \overline{EF}$	3.
4. $\triangle ABC \cong \triangle DEF$	4.

CROSS-EXAMINATION: CARD SET E

Given: $\overline{AC} \cong \overline{OD}$, $\overline{CT} \cong \overline{DG}$,
and $\angle C \cong \angle D$

Prove: $\triangle CAT \cong \triangle DOG$



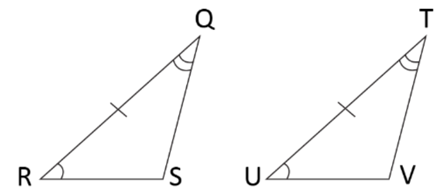
Statement:	Reason:
1. $\overline{AC} \cong \overline{OD}$	1. Given
2. $\angle C \cong \angle D$	2.
3.	3. Given
4. $\triangle CAT \cong \triangle DOG$	4.

CROSS-EXAMINATION: CARD SET E

Given: $\angle R \cong \angle U$, $\angle Q \cong \angle T$,

and $\overline{RQ} \cong \overline{UT}$

Prove: $\triangle QRS \cong \triangle TUV$



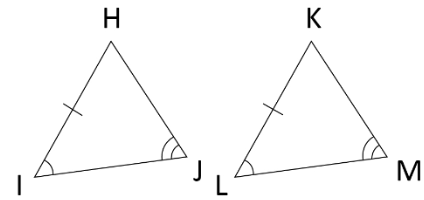
Statement:	Reason:
1. $\angle R \cong \angle U$	1. Given
2.	2. Given
3. $\angle Q \cong \angle T$	3.
4.	4.

CROSS-EXAMINATION: CARD SET E

Given: $\angle I \cong \angle L$, $\angle J \cong \angle M$,

and $\overline{HI} \cong \overline{KL}$

Prove: $\triangle HIJ \cong \triangle KLM$

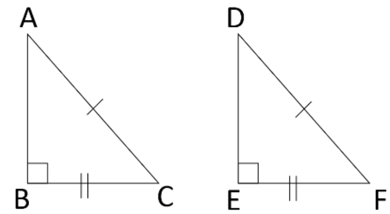


Statement:	Reason:
1. $\angle I \cong \angle L$	1.
2.	2. Given
3. $\overline{HI} \cong \overline{KL}$	3. Given
4.	4.

CROSS-EXAMINATION: CARD SET E

Given: $\overline{AC} \cong \overline{DF}$, $\overline{BC} \cong \overline{EF}$, and $\angle B \cong \angle E$

Prove: $\triangle ABC \cong \triangle DEF$ (Right triangles only)



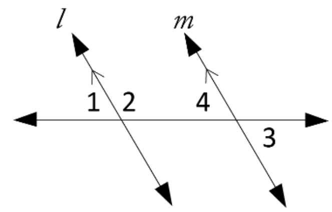
Statement:	Reason:
1. $\angle B \cong \angle E$	1. Given
2.	2. Given
3. $\overline{BC} \cong \overline{EF}$	3. Given
4.	4.

CROSS-EXAMINATION: CARD SET E

A) Given	B) SSS Theorem	H) $\overline{AC} \cong \overline{DF}$
A) Given	C) SAS Theorem	J) $\overline{CT} \cong \overline{DG}$
A) Given	D) AAS Theorem	K) $\overline{RQ} \cong \overline{UT}$
A) Given	E) HL Theorem	L) $\triangle HIJ \cong \triangle KLM$
A) Given	F) ASA Theorem	M) $\triangle ABC \cong \triangle DEF$
A) Given	G) $\angle J \cong \angle M$	N) $\triangle QRS \cong \triangle TUV$

CROSS-EXAMINATION: CARD SET F

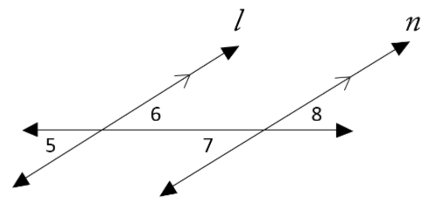
Given: $\angle 1$ and $\angle 2$ are a Linear Pair
Prove: $\angle 1 \cong \angle 3$



Statement:	Reason:
1. $\angle 1$ and $\angle 2$ are a Linear Pair	1.
2. *Line* l is parallel to *Line* m	2.
3. $\angle 1 \cong \angle 4$	3.
4. $\angle 4 \cong \angle 3$	4.
5. $\angle 1 \cong \angle 3$	5.

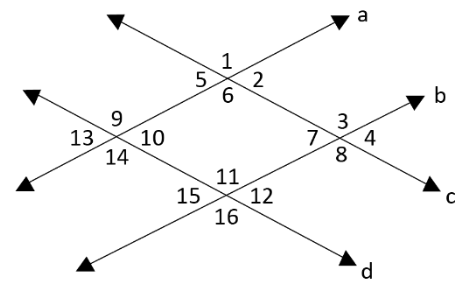
CROSS-EXAMINATION: CARD SET F

Given: $\angle 6 \cong \angle 7$
Prove: $\angle 5 \cong \angle 8$



Statement:	Reason:
1. $\angle 6 \cong \angle 7$	1. Given
2. *Line* l is parallel to *Line* n	2. Given
3. $\angle 5 \cong \angle 6$	3.
4.	4.
5. $\angle 5 \cong \angle 8$	5.

CROSS-EXAMINATION: CARD SET F

Given: $a \parallel b$ $c \parallel d$ **Prove:** $\angle 13 \cong \angle 4$	

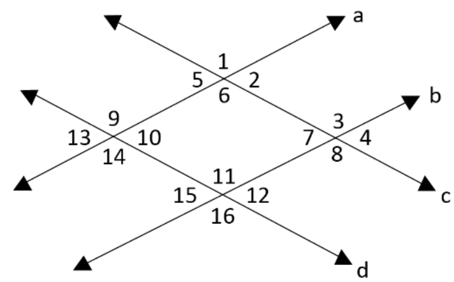
Statement:	Reason:
1. $a \parallel b$	1.
2. $c \parallel d$	2. Given
3. $\angle 13 \cong \angle 15$	3.
4. $\angle 15 \cong \angle 12$	4. Vertical Angles Theorem
5.	5. Corresponding Angles Theorem
6.	6. Transitive Property

CROSS-EXAMINATION: CARD SET F

Given: $a \parallel b$

$c \parallel d$

Prove: $\angle 5 \cong \angle 12$



Statement:	Reason:
1. $a \parallel b$	1.
2.	2. Given
3. $\angle 5 \cong \angle 10$	3.
4.	4. Corresponding Angles Theorem
5. $\angle 5 \cong \angle 12$	5.

CROSS-EXAMINATION: CARD SET F

A) Given	D) Transitive Property	H) Vertical Angles Theorem
A) Given	D) Transitive Property	H) Vertical Angles Theorem
A) Given	D) Transitive Property	H) Vertical Angles Theorem
A) Given	E) Alternate Interior Angles Theorem	J) Corresponding Angles Theorem
B) $c \parallel d$	F) $\angle 7 \cong \angle 8$	J) Corresponding Angles Theorem
C) $\angle 12 \cong \angle 4$	G) $\angle 13 \cong \angle 4$	K) $\angle 10 \cong \angle 12$