Do Now:
Write the 5 steps for an addition or subtraction problem

1) given
2) given/ reflexive
3) addition/subtraction
4) W=SOP
5) substitution

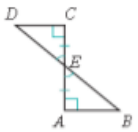
CPCTC w/Addition & Subtraction

Agenda

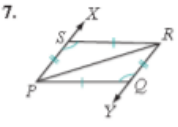
1)Do Now
2)Review HW
3)Finish CPCTC w/Add & Subtract
4)HW:Finish CPCTC Packet

HW: pg 180 (6-10, 12-14)

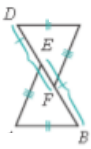
In 3-8, the figures have been marked to indicate pairs of congruent angles and pairs of congruent segments.
a. In each figure, name two triangles that are congruent.
b. State the reason why the triangles are congruent.
c. For each pair of triangles, name three additional pairs of parts that are congruent because they are corresponding parts of congruent triangles.



7.



8.

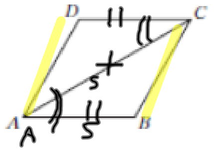


6. a. $\triangle ABE \cong \triangle CDE$
   b. ASA
   c. $\angle B \cong \angle D, \overline{AB} \cong \overline{CD}, \overline{BE} \cong \overline{DE}$
7. a. $\triangle PQR \cong \triangle RSP$
   b. SAS
   c. $\angle QRP \cong \angle SPR, \angle RPQ \cong \angle PRS, \overline{PR} \cong \overline{RP}$
8. a. $\triangle ABE \cong \triangle CDE$
   b. SSS
   c. $\angle A \cong \angle C, \angle B \cong \angle D, \angle BEA \cong \angle DEC$

9. *Given:* $\overline{CA} \cong \overline{CB}$ and D is the midpoint of $\overline{AB}$.
Prove: $\angle A \cong \angle B$

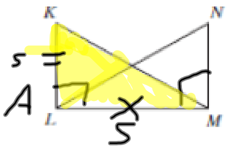
9. *Statements*	*Reasons*
1. $\overline{CA} \cong \overline{CB}$	1. Given.
2. D is the midpoint of $\overline{AB}$.	2. Given. (2)
3. $\overline{AD} \cong \overline{BD}$	3. Definition of midpoint.
4. $\overline{CD} \cong \overline{CD}$	4. Reflexive property.
5. $\triangle CAD \cong \triangle CBD$	5. SSS (steps 1, 3, 4).
6. $\angle A \cong \angle B$	6. Corresponding parts of congruent triangles are congruent. (5)

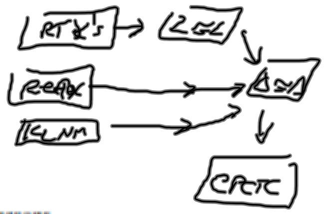
10. *Given:* $\overline{AB} \cong \overline{CD}$ and $\angle CAB \cong \angle ACD$
Prove: $\overline{AD} \cong \overline{CB}$



10. *Statements*	*Reasons*
1. $\overline{AB} \cong \overline{CD}$	1. Given.
2. $\angle CAB \cong \angle ACD$	2. Given.
3. $\overline{AC} \cong \overline{AC}$	3. Reflexive property.
4. $\triangle ABC \cong \triangle CDA$	4. SAS. (1, 2, 3)
5. $\overline{AD} \cong \overline{CB}$	5. Corresponding parts of congruent triangles are congruent. (4)

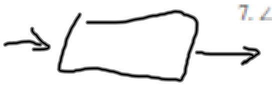
12. *Given:* $\angle KLM$ and $\angle NML$ are right angles and $KL = NM$.
Prove: $\angle K \cong \angle N$





12. *Statements*	*Reasons*
1. $KL = NM$	1. Given.
2. $\overline{KL} \cong \overline{NM}$	2. Segments of equal measure are congruent.
3. $\angle KLM$ and $\angle NML$ are right angles.	3. Given.
4. $\angle KLM \cong \angle NML$	4. Right angles are congruent. (3)
5. $\overline{LM} \cong \overline{LM}$	5. Reflexive property.
6. $\triangle KLM \cong \triangle NML$	6. SAS (steps 2, 4, 5).
7. $\angle K \cong \angle N$	7. Corresponding parts of congruent angles are congruent. (6)

of congruent

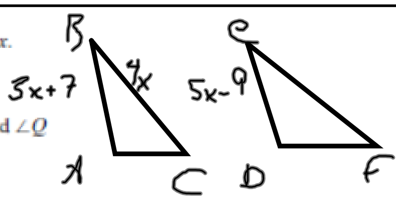


13. Triangle ABC is congruent to triangle DEF, $AB = 3x + 7$, $DE = 5x - 9$, and $BC = 4x$. Find:

a. x **b.** AB **c.** BC **d.** EF

14. Triangle PQR is congruent to triangle LMN, $m\angle P = 7a$, $m\angle L = 4a + 15$, and $\angle P$ and $\angle Q$ are complementary. Find:

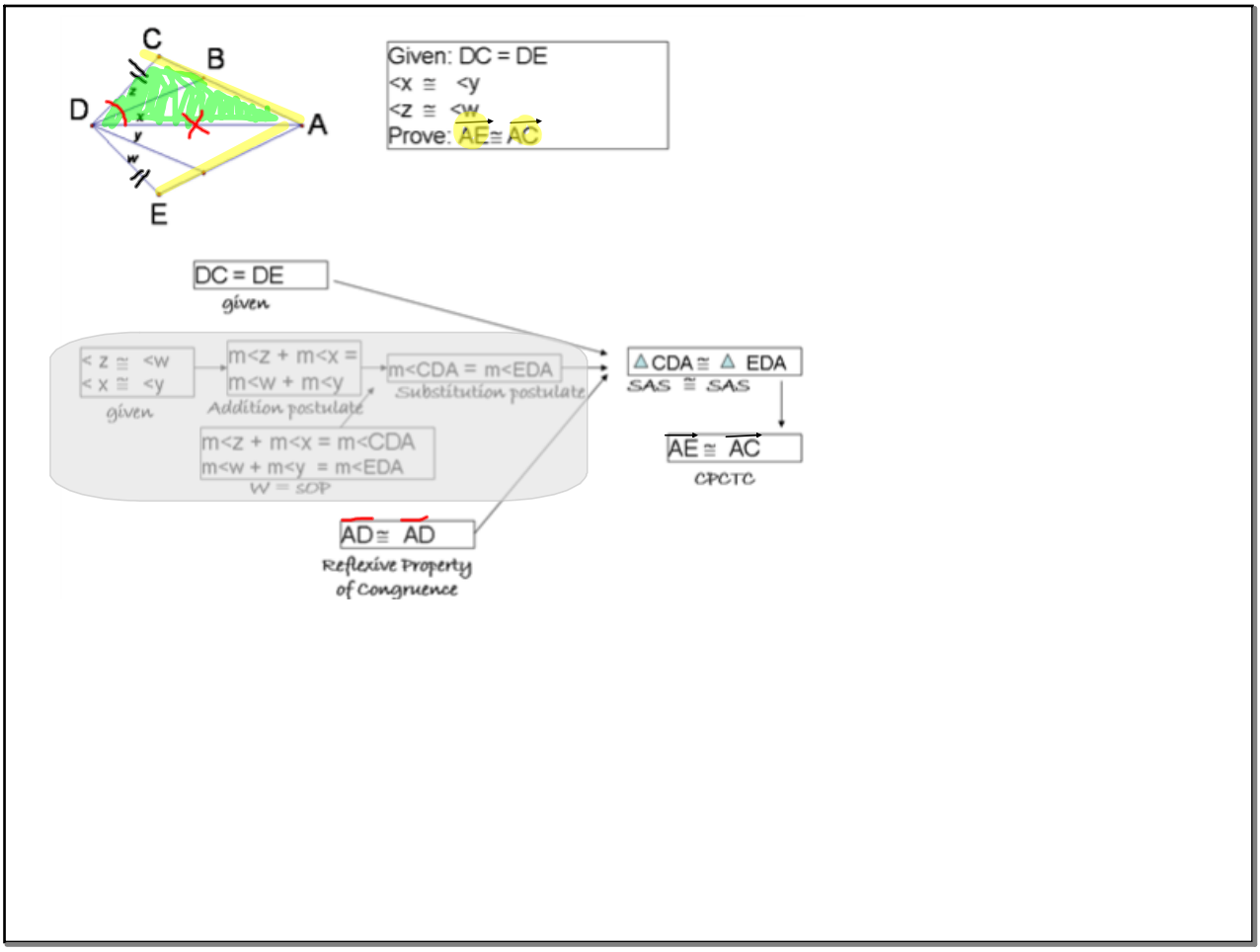
a. a **b.** $m\angle P$ **c.** $m\angle Q$ **d.** $m\angle M$

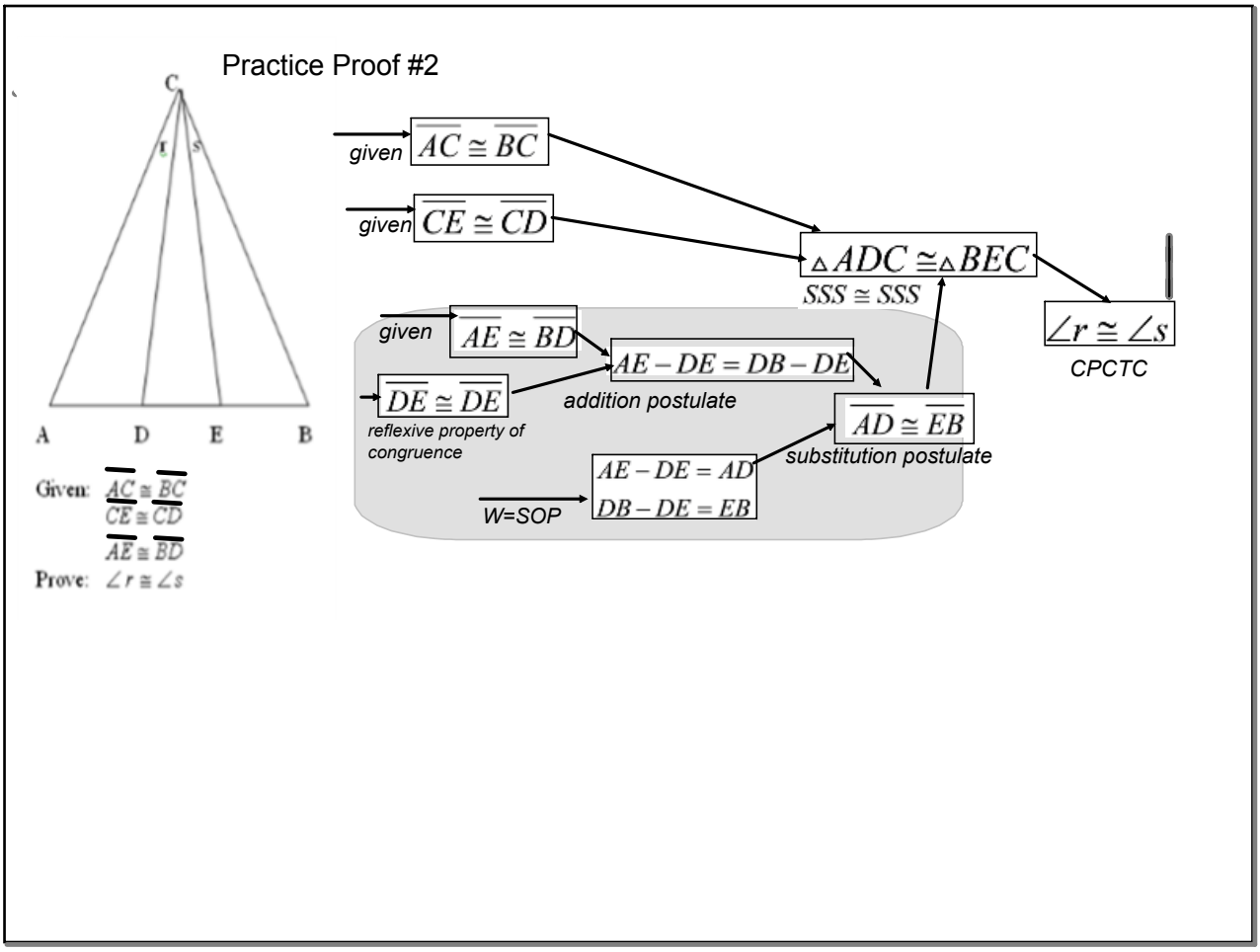


13. a. $x = 8$ **b.** $AB = 31$
c. $BC = 32$ **d.** $EF = 32$
14. a. $a = 5$ **b.** $m\angle P = 35°$
c. $m\angle Q = 55°$ **d.** $m\angle M = 55°$

$BA = ED$
$3x + 7 = 5x - 9$
⋮
$x = 8$

$BC = EF$
$4x = EF$
$32 = EF$


C
B
D
A
E
Given: DC = DE
<x ≅ <y
<z ≅ <w
Prove: AE ≅ AC
DC = DE
given
< z ≅ <w
< x ≅ <y
given
m<z + m<x = m<w + m<y
Addition postulate
m<CDA = m<EDA
Substitution postulate
m<z + m<x = m<CDA
m<w + m<y = m<EDA
W = SOP
△CDA ≅ △EDA
SAS ≅ SAS
AE ≅ AC
CPCTC
AD ≅ AD
Reflexive Property of Congruence


Practice Proof #2
C
r
s
A
D
E
B
Given: AC ≅ BC
CE ≅ CD
AE ≅ BD
Prove: ∠r ≅ ∠s
given AC ≅ BC
given CE ≅ CD
△ADC ≅ △BEC
SSS ≅ SSS
∠r ≅ ∠s
CPCTC
given AE ≅ BD
AE − DE = DB − DE
DE ≅ DE
addition postulate
reflexive property of congruence
AD ≅ EB
substitution postulate
AE − DE = AD
DB − DE = EB
W=SOP