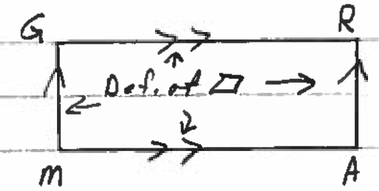
A#40 Pt I p. 168-169 CE#1-2 and WE#5-10 **Key**

Pt II p. 169-170 WE#16, 22-24, 27-28, 30-31

Pt I p. 168-169 CE#1-2 and WE#5-10

CE 1. Given: ▱GRAM



a. ∠G is supp to ∠M [S.S. Int. ∠s Thm]

b. ∠M is supp to ∠A ["]

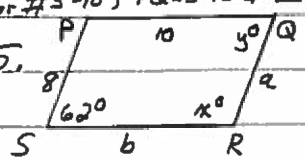
c. Consecutive angles of a ▱ are supplementary, while opposite ∠s are ≅.

2. Given: ∠M is a right ∠

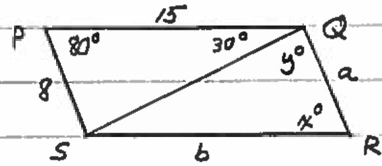
Conclusion: ∠A, ∠R, ∠G are all right ∠s. (See 1c.)

For #5-10, PQRS is a ▱.

WE 5.



6.



5.

① $\boxed{a=8,\ b=10}$ [opp. sides of a ▱ are ≅]

② $\boxed{y=62}$ [Opp. ∠s of a ▱ are ≅]

③ $x+62=180$ [Consec. ∠s of a ▱ are supp.]

$\boxed{x=118}$

6.

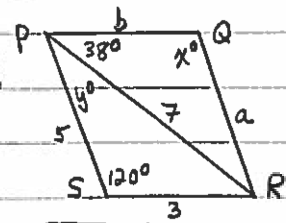
① $\boxed{a=8,\ b=15}$ [opp. sides of a ▱ are ≅]

② $\boxed{x=80}$ [opp. ∠s of a ▱ are ≅]

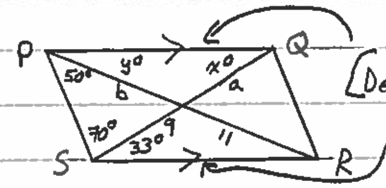
③ $y+30+80=180$ [Consec. ∠s of a ▱ are supp.]

$\boxed{y=70}$

7.



8.



[Def. of ▱]

7.

① $\boxed{x=120}$ [Opp. ∠s of a ▱ are ≅]

② $a=5,\ b=3$ [opp. sides of a ▱ are ≅]

③ $y+38+120=180$ [Consec. ∠s of a ▱ are supp.]

$\boxed{y=22}$

8.

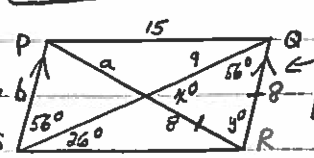
① $\boxed{a=9,\ b=11}$ [Diagonals of a ▱ bisect each other]

② $\boxed{x=33}$ [Alt. Int. ∠s Thm]

③ $y+50+70+33=180$ [Consec. ∠s of a ▱ are supp.]

$\boxed{y=27}$

9.



[Def of ▱]

① $\boxed{a=8}$ [Diagonals of a ▱ bisect each other]

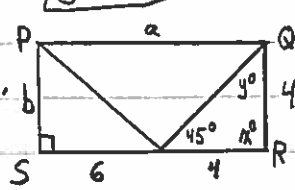
② $\boxed{b=8}$ [opp. sides of a ▱ are ≅]

③ $m\angle SQR=56°$ [Alt. Int. ∠s Thm]

④ $\boxed{x=56}$ [Base ∠s Thm]

⑤ $\boxed{y=68}$ [Δ Sum Thm]

10.



① $x+90=180$ [Consec. ∠s of a ▱ are supp]

$\boxed{x=90}$

② $\boxed{y=45}$ [Δ Sum Thm]

③ $QR=4$ [Base ∠s Thm]

④ $\boxed{a=10,\ b=4}$ [Opp. sides of a ▱ are ≅]

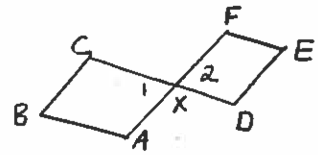
A#40 continued

Key

Pt II p. 169-170 WE #16, 22-24, 27-28, 30-31

WE 16. Given: ▱ABCX, ▱DXFE

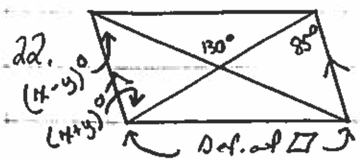
Prove: $\angle B \cong \angle E$



Statements	Reasons
1. ▱ABCX, ▱DXFE	1. Given
2. $\angle B \cong \angle 1$, $\angle 2 \cong \angle E$	2. Opp. ∠s of a ▱ are ≅
3. $\angle 1 \cong \angle 2$	3. Vert. ∠s Thrm
4. $\angle B \cong \angle E$	4. Trans. Prop. of ≅

▱ for #22-24

22.



① $x-y+x+y=130$ [Ext ∠ of a △ Thm]

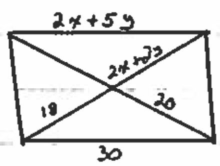
$2x=130$

$\boxed{x=65}$

② $x+y=85$ [Alt. Int. ∠s Thm]

$\boxed{y=20}$

23.



① $2x+5y=30$ [Opp. sides of a ▱ are ≅]

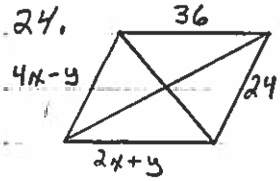
② $2x+2y=18$ [Diagonals of a ▱ bisect each other]

$3y=12$

$\boxed{y=4}$ → $2x+8=18$

$2x=10$ → $\boxed{x=5}$

24.



① $4x-y=24$

$2x+y=36$ [Opp. sides of a ▱ are ≅]

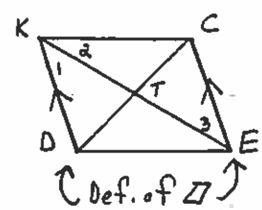
$6x=60$

$\boxed{x=10}$ → $20+y=36$

$\boxed{y=16}$

27. ① $m\angle 1 = 3x$, $m\angle 2 = 4x$, $m\angle 3 = x^2-70$ [Given]

For #27-28, ▱DECK



② $m\angle 1 = m\angle 3$ [Alt. Int. ∠s Thm]

$3x = x^2-70$

$0 = x^2-3x-70$

$0=(x-10)(x+7)$

$x = 10, -7$

$\boxed{x=10}$

$x=-7$

$m\angle 1 = -21$ X No neg measures!

$x=10$

$m\angle 1 = 30°$ $m\angle 2 = 40°$ $m\angle 3 = 30°$ ✓

③ $m\angle DKC = 70°$ [∠ Add Post]

④ $m\angle CED = m\angle DKC$ [Opp. ∠s of a ▱ are ≅]

$m\angle CED = 70°$

28. ① $m\angle 1 = 42°$, $m\angle 2 = x^2$, $m\angle CED = 13x$ [Given]

② $m\angle CED = m\angle 1 + m\angle 2$ [Opp. ∠s of a ▱ are ≅ / ∠ Add Post]

$13x = 42 + x^2$

$0 = x^2 - 13x + 42$

$0 = (x-6)(x-7)$

$x = 6, 7$

$x=6$ or $x=7$

$m\angle 2 = 36°$ or $m\angle 2 = 49°$

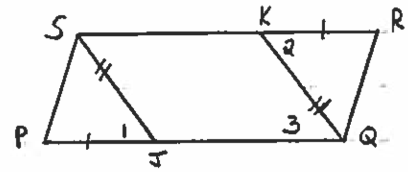
A#40 continued

p.170 WE #30-31

Key

WE 30. Given: ▱JQKS; $\overline{PJ} \cong \overline{RK}$

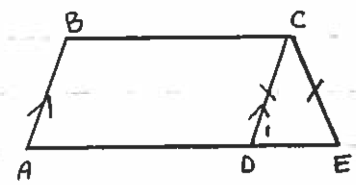
Prove: $\angle P \cong \angle R$



Statements	Reasons
1. ▱JQKS, $\overline{PJ} \cong \overline{RK}$	1. Given
2. $\overline{SJ} \cong \overline{KQ}$	2. Opp. Sides of a ▱ are $\cong$
3. $\overline{SJ} \parallel \overline{KQ}$, $\overline{SK} \parallel \overline{JQ}$	3. Def. of ▱
4. $\angle 1 \cong \angle 3$	4. Corr. ∠s Post.
5. $\angle 2 \cong \angle 3$	5. Alt. Int. ∠s Thm
6. $\angle 1 \cong \angle 2$	6. Trans. Prop. of $\cong$
7. $\triangle PJS \cong \triangle RKQ$	7. SAS $\cong$ Post.
8. $\angle P \cong \angle R$	8. CPCTC

31. Given: ▱ABCD, $\overline{CD} \cong \overline{CE}$

Prove: $\angle A \cong \angle E$



Statements	Reasons
1. ▱ABCD, $\overline{CD} \cong \overline{CE}$	1. Given
2. $\overline{AB} \parallel \overline{DC}$	2. Def. of ▱
3. $\angle A \cong \angle 1$	3. Corr. ∠s Post.
4. $\angle 1 \cong \angle E$	4. Base ∠s Thrm
5. $\angle A \cong \angle E$	5. Trans. Prop. of $\cong$