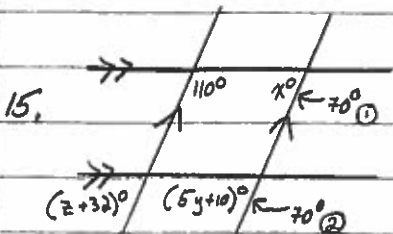
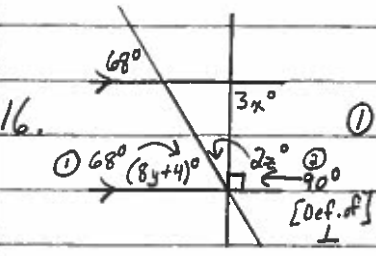


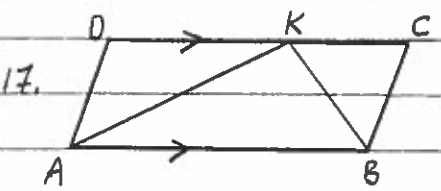
- 14.
- ① $x = 56$ [Alt. Int. Ls Thm]
 - ② 80° [∠ Add Post]
 - ③ $y + 80 = 180$ [S.S. Int. Ls Thm]
 - $y = 100$
 - ④ $4z + 80 = 180$ [S.S. Int. Ls Thm]
 - $4z = 100$
 - $z = 25$



- 15.
- ① $x + 110 = 180$ [SS Int. Ls Thm]
 - ② $5y + 10 = 70$ [Corr. Ls Post]
 - $x = 70$
 - $5y = 60$
 - $y = 12$
 - ③ $z + 32 = 70$ [Corr. Ls Post]
 - $z = 38$



- 16.
- ① 68° $(8y + 4)^\circ$
 - ② $2z^\circ$ 90°
 - $8y = 64$
 - $y = 8$
 - ③ $3x = 90$ [Corr. Ls Post]
 - $x = 30$
 - ④ $2z + 68 = 90$ [Ext. Sides. I → Adj. Comp. Ls]
 - $2z = 22$
 - $z = 11$



17. Given: $\overline{AB} \parallel \overline{CD}$; $m\angle D = 116^\circ$; \overline{AK} bisects $\angle DAB$

- a.
- ① $m\angle DAB + m\angle D = 180^\circ$ [S.S. Int. Ls Thm / Def. of \parallel Ls]
 - ② $m\angle DAB = 64^\circ$ [Subst. Prop. of = (1 - given)]
 - ③ $m\angle KAB = \frac{1}{2}m\angle DAB$ [∠ Bisector Thm #1]
 - ④ $m\angle KAB = 32^\circ$ [Subst. Prop. of = (2 → 3)]
 - ⑤ $m\angle DKA = 32^\circ$ [Alt. Int. Ls Thm / Def. of \cong Ls]

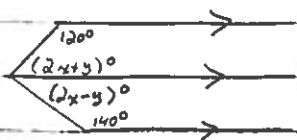
b. Are $\angle D$ and $\angle C$ supplementary? More info is needed.
We would need $\overline{AD} \parallel \overline{BC}$.

A#23 Continued

Key

p. 82 WE # 18-19, 21-24

18.



① By the S-S Int. Ls Thm:

$$2x + y + 120 = 180$$

$$2x - y + 140 = 180$$

$$4x + 260 = 360$$

$$4x = 100$$

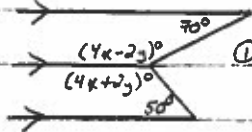
$$x = 25$$

② $2(25) + y + 120 = 180$

$$50 + y + 120 = 180$$

$$y = 10$$

19.



① By the S-S Int. Ls Thm:

$$4x - 2y + 70 = 180$$

$$4x + 2y + 50 = 180$$

$$8x + 120 = 360$$

$$8x = 240$$

$$x = 30$$

② $4(30) + 2y + 50 = 180$

$$120 + 2y + 50 = 180$$

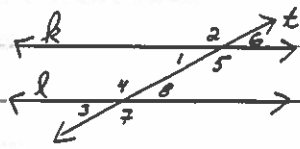
$$2y = 10$$

$$y = 5$$

21. Given: $k \parallel l$

Prove: $\angle 1$ is supp. to $\angle 7$

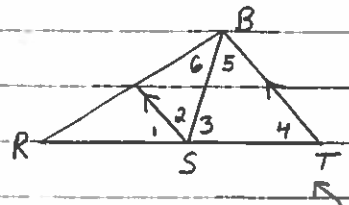
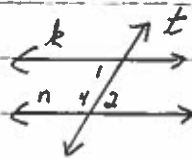
- | Statements | Reasons |
|-------------------------------------|-----------------------|
| ① $k \parallel l$ | ① Given |
| ② $\angle 1$ is supp. to $\angle 4$ | ② S-S Int. Ls Thm |
| ③ $\angle 4 \cong \angle 7$ | ③ Vert Ls Thm |
| ④ $\angle 1$ is supp. to $\angle 7$ | ④ \cong Supp. Conv. |



22. Given: $k \parallel n$

Prove: $\angle 1$ is supp. to $\angle 4$

- | Statements | Reasons |
|-------------------------------------|-----------------------|
| ① $k \parallel n$ | ① Given |
| ② $\angle 2$ is supp. to $\angle 4$ | ② \angle Add. Post. |
| ③ $\angle 1 \cong \angle 2$ | ③ Alt. Int. Ls Thm |
| ④ $\angle 1$ is supp. to $\angle 4$ | ④ \cong supp. conv. |



23.



- ① $\overline{AB} \parallel \overline{DC}$, $\overline{AD} \parallel \overline{BC}$ [Given]
- ② $\angle A$ is supp. to $\angle B$ [S.S. Int. Ls Thm]
- $\angle C$ is supp. to $\angle B$
- ③ $\angle A \cong \angle C$ [\cong Supp. Thm]
- * Likewise, $\angle B \cong \angle D$!

24. Given: $\overline{AS} \parallel \overline{BT}$; $m\angle 4 = m\angle 5$ [See diagram]

Prove: \overline{SA} bisects $\angle BSR$

- | Statements | Reasons |
|---|-----------------------------|
| ① $\overline{AS} \parallel \overline{BT}$; $m\angle 4 = m\angle 5$ | ① Given |
| ② $\angle 1 \cong \angle 4$ | ② Corr. Ls Post. |
| ③ $\angle 4 \cong \angle 5$ | ③ Def. of \cong Ls |
| ④ $\angle 5 \cong \angle 2$ | ④ Alt. Int. Ls Thm |
| ⑤ $\angle 1 \cong \angle 2$ | ⑤ Trans. Prop. of \cong |
| ⑥ \overline{SA} bisects $\angle BSR$ | ⑥ Def. of \angle bisector |