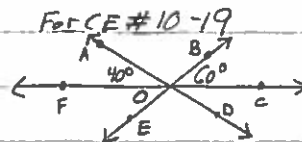


A#16 p. 52-54 CE#10-19, 21 (Reasons Required)

WE#13-18, 20, 21-27 odd, 30-33

p. 52
CE #10-19, 21



$m\angle AOF = 40^\circ$
 $m\angle BOC = 60^\circ$ [Given]

10. $\angle AOB \cong \angle EOD$ [Vert. \angle s Thm]

11. $\angle AOE \cong \angle BOD$ [" " "]

12. $\angle FOB \cong \angle COE$ [" " "]

13. $\angle COA \cong \angle FOD$ [" " "]

14. $\angle FOE \cong \angle BOC$ [Vert. \angle s Thm]

$m\angle FOE = 60^\circ$ [Def. of $\cong \angle$ s]

15. $\angle COD \cong \angle AOF$ [Vert. \angle s Thm]

$m\angle COD = 40^\circ$ [Def. of $\cong \angle$ s]

16. $m\angle DOB = m\angle BOC + m\angle COD$ [\angle Add Post]

$m\angle DOB = 60 + 40$ [Subst. Prop. of =] See #15 + Given!

$m\angle DOB = 100^\circ$

17. $m\angle AOB + m\angle DOB = 180^\circ$ [\angle Add Post]

$m\angle AOB + 100 = 180^\circ$ [Subst. Prop. of =] see #16!

$m\angle AOB = 80^\circ$ [Subst. Prop. of =]

18. $m\angle COE + m\angle FOE = 180^\circ$ [\angle Add Post]

$m\angle COE + 60 = 180^\circ$ [Subst. Prop. of =] See #14!

$m\angle COE = 120^\circ$ [Subst. Prop. of =]

19. $m\angle FOB = 120^\circ$ [Def. of $\cong \angle$ s] See #12!

21. Statements

Reasons

q+b ① $\angle 2 \cong \angle 3$

① Given

Together ② $\angle 1 \cong \angle 2; \angle 3 \cong \angle 4$

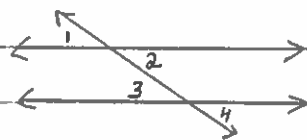
② Vertical \angle s Thm

③ $\angle 1 \cong \angle 3;$

③ Trans. Prop. of \cong

$\angle 1 \cong \angle 4;$

$\angle 2 \cong \angle 4$



A#16 continued

Key

p. 53-54

WE #13-18, 20, 21-27 odd, 30-33

For Ex. 13-18

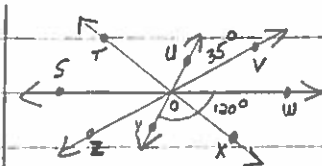
13. $\angle ZOY \cong \angle UOV$ [Vert. \angle s Thm]

$m\angle ZOY = 35^\circ$ [Def. of $\cong \angle$ s]

14. $m\angle ZOW = m\angle ZOY + m\angle WOY$ [\angle Add Post]

$m\angle ZOW = 35 + 120$ [Subst. Prop. of =] ^{See #13 + Given!}

$m\angle ZOW = 155^\circ$



$m\angle UOV = 35^\circ$ and $m\angle WOY = 120^\circ$ [Given]

\vec{OT} bisects $\angle SOU$ [Given]

15. $m\angle UOV + m\angle VOW + m\angle WOY = 180^\circ$ [\angle Add Post]

$35 + m\angle VOW + 120 = 180^\circ$ [Subst. Prop. of =] See Given!

$m\angle VOW = 25^\circ$ [Subst. Prop. of =]

16. $\angle SOU \cong \angle WOY$ [Vert. \angle s Thm]

$m\angle SOU = 120^\circ$ [Def. of $\cong \angle$ s]

17. $m\angle TOU = \frac{1}{2} m\angle SOU$ [\angle bisector Thm #1]

$m\angle TOU = 60^\circ$ [Subst. Prop. of =] See #16!

18. $m\angle ZOT + m\angle TOU + m\angle UOV = 180^\circ$ [\angle Add Post]

$m\angle ZOT + 60 + 35 = 180^\circ$ [Subst. Prop. of =] See #17 + Given!

$m\angle ZOT = 85^\circ$

20. $3x + 8 = 6x - 22$ [Vert. \angle s Thm / Def. of $\cong \angle$ s]

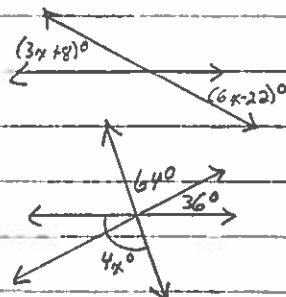
$-3x = -30$

$x = 10$

21. $4x = 36 + 64$ [Vert. \angle s Thm / \angle Add Post / Def. of $\cong \angle$ s]

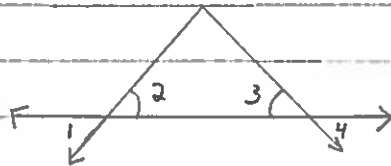
$4x = 100$

$x = 25$



23. Given: $\angle 2 \cong \angle 3$

Prove: $\angle 1 \cong \angle 4$



Statements

Reasons

① $\angle 1 \cong \angle 2$

① Vert. \angle s Thm

② $\angle 2 \cong \angle 3$

② Given

③ $\angle 3 \cong \angle 4$

③ Vert. \angle s Thm

④ $\angle 1 \cong \angle 4$

④ Trans. Prop. of \cong

25. $\angle A$ and $\angle B$ are supplementary. [Given]

$m\angle A = x + 16$, $m\angle B = 2x - 16$ [Given]

$m\angle A + m\angle B = 180^\circ$ [Def. of Supp. \angle s]

$x + 16 + 2x - 16 = 180^\circ$

$3x = 180^\circ$

$x = 60$

$m\angle A = 76^\circ$

$m\angle B = 104^\circ$

A#16 Continued

p. 53-54 WE #27, 30-33

27. $\angle C$ and $\angle D$ are complementary; $m\angle C = y - 8$; $m\angle D = 3y + 2$ [Given]

$$m\angle C + m\angle D = 90^\circ \text{ [Def. of Comp. } \angle\text{s]}$$

$$y - 8 + 3y + 2 = 90$$

$$4y = 96$$

$$y = 24$$

$$m\angle C = 16^\circ$$

$$m\angle D = 74^\circ$$

30. ① orig = x

$$\text{Supp} = 180 - x$$

[Def. of Supp. \angle s]

② $\text{supp} = 2(\text{orig}) + 12$ [Given]

$$180 - x = 2x + 12$$

$$168 = 3x$$

$$x = 56$$

$$\text{Orig} = 56^\circ$$

$$\text{Supp} = 124^\circ$$

31. ① orig = x

$$\text{comp} = 90 - x \text{ [Def. of comp. } \angle\text{s]}$$

$$\text{Supp} = 180 - x \text{ [Def. of supp } \angle\text{s]}$$

② $\text{supp} = 6(\text{comp})$ [Given]

$$180 - x = 6(90 - x)$$

$$180 - x = 540 - 6x$$

$$5x = 360$$

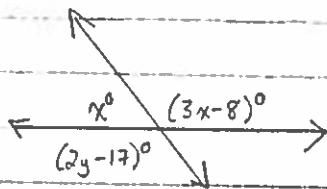
$$x = 72$$

$$\text{Orig} = 72^\circ$$

$$\text{Comp} = 18^\circ$$

$$\text{Supp} = 108^\circ$$

32.



$$\textcircled{1} x + 3x - 8 = 180^\circ \text{ [} \angle\text{Add Post]}$$

$$4x = 188$$

$$x = 47$$

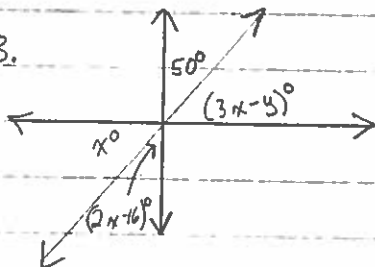
$$\textcircled{2} 2y - 17 + x = 180^\circ \text{ [} \angle\text{Add Post]}$$

$$2y - 17 + 47 = 180$$

$$2y = 150$$

$$y = 75$$

33.



$$\textcircled{1} 2x - 16 = 50 \text{ [Vert. } \angle\text{s thm / Def. of } \cong \angle\text{s]}$$

$$2x = 66$$

$$x = 33$$

$$\textcircled{2} x = 3x - y \text{ [Vert. } \angle\text{s thm / Def. of } \cong \angle\text{s]}$$

$$33 = 3(33) - y$$

$$y = 66$$