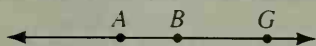


Chapter 2

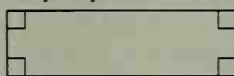
Written Exercises, Page 35

1. H: $3x - 7 = 32$, C: $x = 13$ 3. H: you will, C: I'll try 5. H: $a + b = a$, C: $b = 0$ 7. B is between A and C if and only if $AB + BC = AC$. 9. If points are collinear, then they all lie in 1 line. If points lie in 1 line, then they are collinear. Answers may vary in Exs. 11–15. 11. $a = 1$, $b = -1$

13.



15.



17. True. If $|x| = 6$, then $x = -6$; false. 19. True. If $5b > 20$, then $b > 4$; true. 21. True. If Pam lives in Illinois, then she lives in Chicago; false. 23. True. If $a^2 > 9$, then $a > 3$; false. 25. False. If $n > 7$, then $n > 5$; true. 27. False. If $DE + EF = DF$, then points D, E, and F are collinear; true. 29. Two \triangle are \cong if and only if their measures are =. 31. Possible conclusions are: q , not r , s .

Mixed Review Exercises, Page 37

1. \overline{AM} ; \overline{MB} 2. $\angle ABX$; $\angle XBC$ 3. $\angle AOB$; $\angle BOC$; $\angle AOC$ 4. $\angle POR$; $\angle ROQ$; 180

Written Exercises, Pages 41–43

1. Given; Add. Prop. of =; Div. Prop. of = 3. Given; Mult. Prop. of =; Subtr. Prop. of = 5. Given; Mult. Prop. of =; Dist. Prop.; Add. Prop. of =; Div. Prop. of = 7. 1. \angle Add. Post. 2. \angle Add. Post.
3. $m\angle AOD = m\angle 1 + m\angle 2 + m\angle 3$; Substitution Prop. 9. 1. Given 2. OW , WN ; Seg. Add. Post.
3. $DO + OW = OW + WN$ 4. Refl. Prop. 5. $DO = WN$; Subtr. Prop. of = 11. 1. $m\angle 1 = m\angle 2$;
 $m\angle 3 = m\angle 4$ (Given) 2. $m\angle 1 + m\angle 3 = m\angle 2 + m\angle 4$ (Add. Prop. of =) 3. $m\angle 1 + m\angle 3 =$
 $m\angle SRT$; $m\angle 2 + m\angle 4 = m\angle STR$ (\angle Add. Post.) 4. $m\angle SRT = m\angle STR$ (Substitution Prop.)
13. 1. $RQ = TP$; (Given) 2. $RZ + ZQ = RQ$; $TZ + ZP = TP$ (Seg. Add. Post.) 3. $RZ + ZQ = TZ + ZP$
(Substitution Prop.) 4. $ZQ = ZP$ (Given) 5. $RZ = TZ$ (Subtr. Prop. of =) 15. b

Written Exercises, Pages 46–47

1. Def. of midpt. 3. Def. of \angle bis. 5. Def. of midpt. 7. \angle Add. Post. 9. 60 11. 70
13. a. 12 b. 28 c. 6 d. 22 15. a. \overline{LM} and \overline{MK} , \overline{GN} and \overline{NH} b. Answers may vary; for example,
 $\overline{LK} \cong \overline{GH}$ 17. $AC = BD$ 19. 1. Given 2. Ruler Post. 3. Given 4. Def. of Midpt. 5. Substitution
Prop. 6. $a + b$; Add. Prop. of = 7. Div. Prop. of = 21. $Q: \frac{3a+b}{4}$; $T: \frac{5a+3b}{8}$

Self-Test 1, Page 49

1. H: \overline{AB} and \overline{CD} intersect; C: \overline{AB} and \overline{CD} intersect 2. If \overline{AB} and \overline{CD} intersect, then \overline{AB} and \overline{CD} intersect.
False 3. $\overline{AB} \cong \overline{CD}$ if and only if $AB = CD$. 4. Answers may vary; $m\angle A = 95$ 5. Substitution Prop.
6. $x = 3$ 7. 81 8. definitions, postulates

Written Exercises, Pages 52–54

1. 70, 160 3. $90 - x$, $180 - x$ 5. 45, 45 7. $\angle AFD$ 9. $\angle AFD$ and $\angle AFB$ 11. $\angle BFC$ and $\angle EFD$ 13. 35 15. 25 17. 60 19. 25 21. 25 23. 1. Vertical \triangle are \cong . 2. Given
3. Vert. \triangle are \cong . 4. $\angle 1 \cong \angle 4$ 25. $x = 60$, $m\angle A = 76$, $m\angle B = 104$ 27. $y = 24$, $m\angle C = 16$,
 $m\angle D = 74$ 29. $x = \frac{1}{2}(90 - x)$; 30 31. $180 - x = 6(90 - x)$; 72; 108; 18
33. $x = 33$, $y = 66$

Written Exercises, Pages 58–60

1. a. $90 - x$ b. $180 - x$ 3. Def. of \perp lines 5. If the ext. sides of 2 adj. \triangle are \perp , then the \triangle are
comp. 7. Def. of \perp lines 9. 35 11. 20 13. 1. Given 3. \angle Add. Post. 4. $m\angle AOB +$
 $m\angle BOC = 90$ 5. $\angle AOB$ and $\angle BOC$ are comp. \triangle . 15. $180 - y$ 17. $90 - (x + y)$ 19. No
21. No 23. Yes 25. No 27. Answers may vary. $m\angle 2 = m\angle 3$; $m\angle DAC = 90$; $m\angle ECA = 90$
29. $\overleftrightarrow{XD} \perp \overleftrightarrow{XF}$

Mixed Review Exercises, Page 60

- Answers may vary in Exs. 1–7. 1. $\angle CBF \cong \angle BCG$ 2. $AC = BD$ 3. $\angle 3 \cong \angle 4$ 4. $m\angle 1 =$
 $m\angle 2 = 45$ 5. $CE = BE$ 6. $\overleftrightarrow{AB} \perp \overleftrightarrow{BF}$ 7. $m\angle 5 = 90$