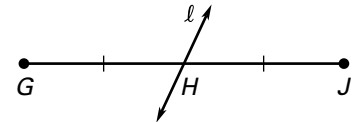
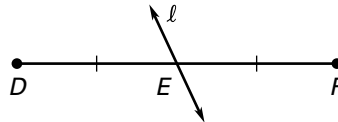
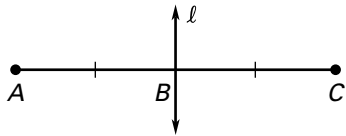


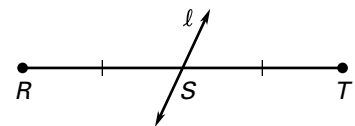
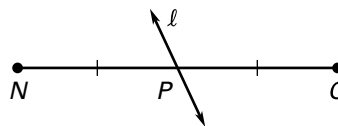
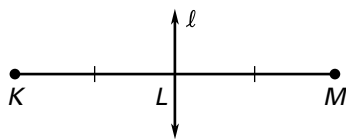
LESSON 1.3 Practice A
For use with pages 15–22

Line l bisects the segment. Find the indicated length.

1. Find AC if $AB = 6$ cm. 2. Find DF if $DE = 17$ cm. 3. Find GJ if $HJ = 8\frac{1}{4}$ in.



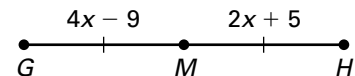
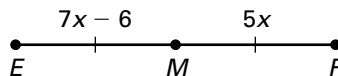
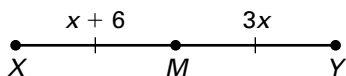
4. Find LM if $KM = 24\frac{3}{4}$ in. 5. Find NP if $NQ = 31.8$ cm. 6. Find ST if $RT = 109$ in.



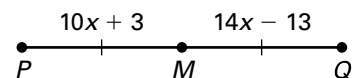
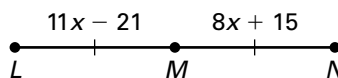
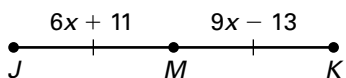
7. Line CD bisects \overline{AB} at point C . Find AC if $AB = 56$ feet.
8. Point W bisects \overline{UV} . Find UV if $WV = 11\frac{1}{8}$ inches.

In each diagram, M is the midpoint of the segment. Find the indicated length.

9. Find XM . 10. Find MF . 11. Find MH .



12. Find JK . 13. Find LN . 14. Find PQ .



Find the coordinates of the midpoint of the segment with the given endpoints.

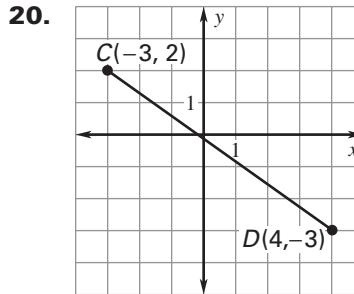
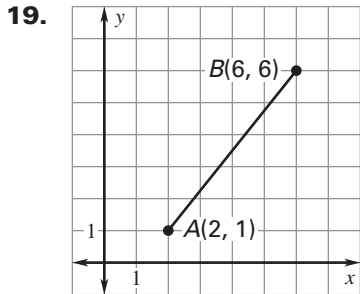
15. $R(3, 1)$ and $S(3, 7)$ 16. $V(2, 4)$ and $W(6, 6)$

Use the given endpoint Y and midpoint M of \overline{YZ} to find the coordinates of the other endpoint Z .

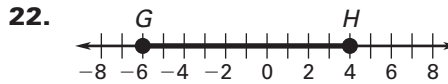
17. $Y(0, 5), M(3, 3)$ 18. $Y(-1, -3), M(5, 9)$

LESSON 1.3 **Practice A** *continued*
For use with pages 15–22

Find the length of the segment. Round to the nearest tenth of a unit. Use the diagram to check that your answer is reasonable.



Find the length of the segment. Then find the coordinate of the midpoint of the segment.



The endpoints of two segments are given. Find each segment length. Tell whether the segments are congruent.

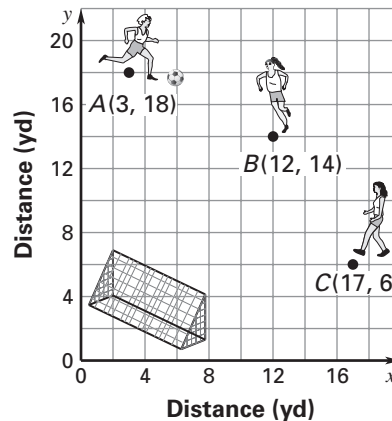
23. \overline{JK} : $J(1, 1), K(0, 5)$
 \overline{LM} : $L(1, 1), M(-3, 2)$

24. \overline{PQ} : $P(4, 3), Q(-1, 6)$
 \overline{RS} : $R(2, -3), S(-2, 0)$

25. **Distances** Your house and your school are 8.4 miles apart on the same straight road. A baseball field is halfway between your house and your school, on the same road.

- Make a sketch to represent this situation. Mark the locations of the house, school, and field. How far is your house from the baseball field?
- You walk at an average speed of 3 miles per hour. About how long would it take you to walk from your house to the baseball field?

26. **Soccer** The diagram shows the position of three soccer players. Player *A* kicks the ball to Player *B*, who then kicks it to Player *C*. How far did Player *A* kick the ball? How far did Player *B* kick the ball? How far would Player *A* have kicked the ball if she had kicked it directly to Player *C*? Round all answers to the nearest tenth of a yard.

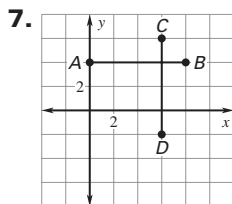


Lesson 1.2, continued

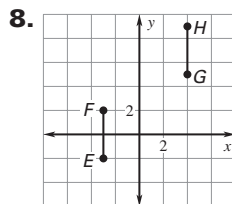
17. 8 18. 2 19. 11 20. 43 21. 33 22. 32
 23. 11 24. 44 25. 24 26. 28 27. 32
 28. $2x + 3x = 25$; $HJ = 10$; $JK = 15$
 29. $\frac{x}{4} + 3x - 4 = 22$; $HJ = 2$; $JK = 20$
 30. $5x - 4 + 8x - 10 = 38$; $HJ = 16$; $JK = 22$
 31. $5x - 3 + x - 9 = 5x$; $HJ = 57$; $JK = 3$
 32. 3.1 mi

Practice Level C

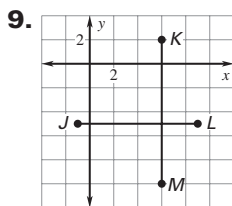
1. 3.3 cm; Check drawings. 2. 1.9 cm; Check drawings.
 3. 2.7 cm; Check drawings. 4. 15.3
 5. 11.5 6. 42.6



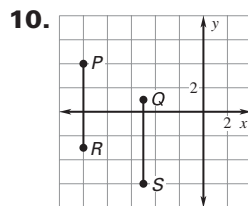
congruent



congruent



not congruent



congruent

11. 6 12. 8 13. 17 14. 13 15. 21 16. 24
 17. 15 18. 30 19. 8.7 20. 21.9 21. 39.3
 22. 11.5 23. 28.9 24. 41.5 25. 16.5
 26. 26.6 27. 23
 28. $7x + 2 + 2x - 1 = 64$; $AB = 51$; $BC = 13$
 29. $10x + 4 + 4x - 3 = 12x + 16$; $AB = 79$;
 $BC = 27$ 30. $4x + 3 + 8x - 11 = 10.5x + 4$;
 $AB = 35$; $BC = 53$
 31. a. 18 mi b. 10.8 mi c. 3.6 mi d. 4.8 mi

Review for Mastery

1. 10 2. 12 3. 6 4. 12 5. congruent 6. not congruent
 7. not congruent 8. congruent

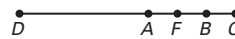
Challenge Practice

1. By the Segment Addition Postulate, you know $AB + BC = AC$ and $BC + CD = BD$. Because $AB = CD$, substitute CD for AB in $AB + BC = AC$ to obtain $CD + BC = AC$. You can then conclude $AC = BD$.
 2. $\overline{QS} \cong \overline{SU} \cong \overline{TV} \cong \overline{RT}$; $\overline{QT} \cong \overline{SV}$;
 $\overline{QU} \cong \overline{RV}$

3. Not sufficient. Counterexample:



4. Not sufficient. Counterexample:



5. Sufficient.
 $AD + DF + FC + CB = AB$

6. a. $AF = GE = CH = HI = ID = 4$;
 $HD = IC = FB = DG = 8$; $AC = CE = 6$;
 $AB = CB = CD = DE = 12$ b. $\frac{4}{13}$; There are a total of 13 segments in the diagram and 4 of those segments have lengths greater than 8.

7. $x^2 + x = 12$; $x = 3$; $LM = 9$, $MN = 3$

8. $x^2 - 5x = 50$; $x = 10$; $LM = 40$, $MN = 10$

9. $2x^2 + 9x = 56$; $x = \frac{7}{2}$; $LM = \frac{49}{4}$, $MN = \frac{175}{4}$

Lesson 1.3

Practice Level A

1. 12 cm 2. 34 cm 3. $16\frac{1}{2}$ in. 4. $12\frac{3}{8}$ in.
 5. 15.9 cm 6. $54\frac{1}{2}$ in. 7. 28 ft 8. $22\frac{1}{4}$ in.
 9. 9 10. 15 11. 19 12. 118 13. 222 14. 86
 15. (3, 4) 16. (4, 5) 17. (6, 1) 18. (11, 21)
 19. 6.4 20. 8.6 21. 4; 0 22. 10; -1
 23. $JK \approx 4.1$, $LM \approx 4.1$; congruent
 24. $PQ \approx 5.8$, $RS = 5$; not congruent

25. a.
 ; 4.2 mi

- b. about 1 h 24 min

26. about 9.8 yd; about 9.4 yd; about 18.4 yd

Practice Level B

1. 7 cm 2. 13.5 ft 3. 9 yd 4. 7.4 m 5. 24
 6. 26 7. 10 8. $(5, -\frac{1}{2})$ 9. (2, 2) 10. (1, 4)
 11. $(-2\frac{1}{2}, -10)$ 12. (-6, 4) 13. (3, -8)
 14. (1, -14) 15. (-19, -3) 16. 3.2 17. 5.4
 18. 4.5 19. 11.3 20. 9; 1.5 21. 7; -4.5
 22. $AB = \sqrt{13}$; $CD = \sqrt{13}$; congruent
 23. $RS = 5$; $TU = 5$; congruent
 24. $KL = \sqrt{85}$; $MN = 9$; not congruent
 25. $OP = 3$; $QR = 5$; not congruent