

LESSON
2.5

Practice B

For use with pages 106–112

LESSON 2.5

Complete the logical argument by giving a reason for each step.

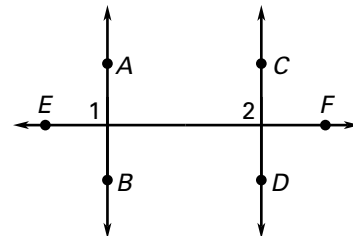
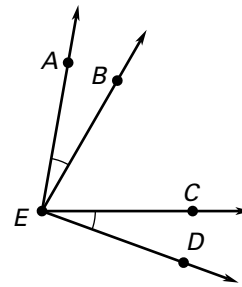
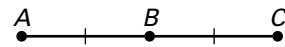
1. $5(2x - 1) = 9x + 2$ Given
 $10x - 5 = 9x + 2$ a. ?
 $10x = 9x + 7$ b. ?
 $x = 7$ c. ?

2. $8x - 5 = -2x - 15$ Given
 $10x - 5 = -15$ a. ?
 $10x = -10$ b. ?
 $x = -1$ c. ?

3. $AB = BC$ Given
 $AC = AB + BC$ a. ?
 $AC = AB + AB$ b. ?
 $AC = 2(AB)$ c. ?

4. $m\angle AEB = m\angle CED$ Given
 $m\angle BEC = m\angle BEC$ a. ?
 $m\angle AEB + m\angle BEC = m\angle CED + m\angle BEC$ b. ?
 $m\angle AEC = m\angle AEB + m\angle BEC$ c. ?
 $m\angle BED = m\angle CED + m\angle BEC$ d. ?
 $m\angle AEC = m\angle BED$ e. ?

5. $\overleftrightarrow{AB} \perp \overleftrightarrow{EF}, \overleftrightarrow{CD} \perp \overleftrightarrow{EF}$ Given
 $m\angle 1 = 90^\circ$ a. ?
 $m\angle 2 = 90^\circ$ b. ?
 $m\angle 1 = m\angle 2$ c. ?



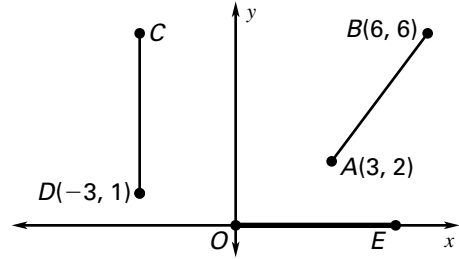
Use the property to complete the statement.

6. Reflexive Property of Angle Measure: $m\angle B = \underline{\quad? \quad}$.
7. Transitive Property of Equality: If $CD = GH$ and $\underline{\quad? \quad} = RS$, then $\underline{\quad? \quad}$.
8. Addition Property of Equality: If $x = 3$, then $14 + x = \underline{\quad? \quad}$.
9. Symmetric Property of Equality: If $BC = RL$, then $\underline{\quad? \quad}$.
10. Substitution Property of Equality: If $m\angle A = 45^\circ$, then $3(m\angle A) = \underline{\quad? \quad}$.
11. Multiplication Property of Equality: If $m\angle A = 45^\circ$, then $\underline{\quad? \quad}(m\angle A) = 15^\circ$.

LESSON 2.5

Practice B *continued*
For use with pages 106–112

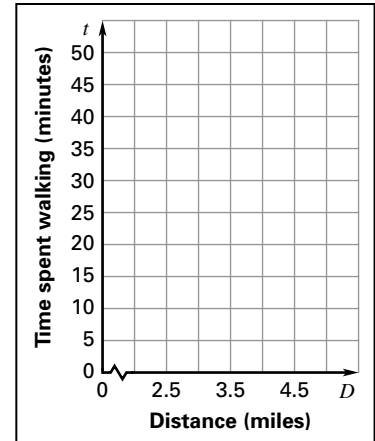
- 12. Distance** You are given the following information about the diagram at the right: $AB = CD$, $CD = OE$. Find the coordinates of points C and E . Explain your reasoning.



In Exercises 13–15, use the following information.

Treadmill Mark works out for 45 minutes on a treadmill. He spends t minutes walking and the rest of the time running. He walks 0.06 mi/min and runs 0.11 mi/min. The total distance (in miles) he travels is given by the function $D = 0.06t + 0.11(45 - t)$.

- 13.** Solve the formula for t and write a reason for each step.
- 14.** Make a table that shows the time spent walking for the following distances traveled: 2.7, 3, 3.7, 4.3, and 4.5.
- 15.** Use the table from Exercise 14 to graph the time spent walking as a function of the distance traveled. What happens to the time spent walking as distance increases?



In Exercises 16–18, use the following information.

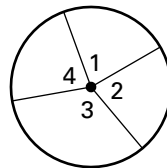
Statistics The students at a school vote for one of four candidates for class president. The circle graph below shows the results of the election. Each sector on the graph represents the percent of the total votes that each candidate received. You know the following about the circle graph.

$$m\angle 1 + m\angle 2 + m\angle 3 + m\angle 4 = 360^\circ$$

$$m\angle 2 + m\angle 3 = 200^\circ$$

$$m\angle 1 = m\angle 4$$

$$m\angle 2 = m\angle 4$$



- 16.** Find the angle measure for each sector.
- 17.** What percent of the vote did each candidate receive?
- 18.** How many votes did each candidate receive if there were a total of 315 votes?

Lesson 2.5, continued

24. a. $m\angle BAC + m\angle DAC = 180^\circ$
 b. $m\angle DAC = 180^\circ - m\angle BAC$ c. 68°

Practice Level B

1. a. Distributive Property b. Addition Property of Equality c. Subtraction Property of Equality

2. a. Addition Property of Equality
 b. Addition Property of Equality c. Division Property of Equality 3. a. Segment Addition Postulate b. Substitution Property of Equality
 c. Distributive Property 4. a. Reflexive Property of Equality b. Addition Property of Equality
 c. Angle Addition Postulate d. Angle Addition Postulate e. Substitution Property of Equality

5. a. Definition of perpendicular segments and definition of right angle b. Definition of perpendicular segments and definition of right angle
 c. Substitution or Transitive Property of Equality 6. $m\angle B$ 7. $GH, CD = RS$ 8. 17

9. $RL = BC$ 10. $3(45)$ 11. $\frac{1}{3}$

12. $C(-3, 6), E(5, 0)$; AB is 5 units long. Because $AB = CD$, then CD is 5 units long. So the coordinates of C are $(-3, 6)$. Because $CD = OE$, then OE is 5 units long. So the coordinates of E are $(5, 0)$.

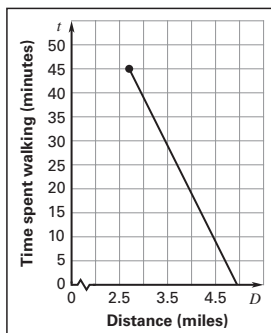
13.

$$\begin{aligned} D &= 0.06t + 0.11(45 - t) && \text{Given} \\ D &= 0.06t + 4.95 - 0.11t && \text{Distributive Property} \\ D &= 0.06t - 0.11t + 4.95 && \text{Group like terms.} \\ D &= -0.05t + 4.95 && \text{Simplify.} \\ 0.05t + D &= 4.95 && \text{Addition Property of Equality} \\ 0.05t &= -D + 4.95 && \text{Subtraction Property of Equality} \\ t &= -20D + 99 && \text{Division Property of Equality} \end{aligned}$$

14.

D	2.7	3	3.7	4.3	4.5
t	45	39	25	13	9

15.



The time spent walking decreases as the distance increases.

16. $m\angle 1 = 80^\circ, m\angle 2 = 80^\circ, m\angle 3 = 120^\circ, m\angle 4 = 80^\circ$ 17. Candidate 1: 22.2%, Candidate 2: 22.2%, Candidate 3: 33.3%, Candidate 4: 22.2% 18. Candidate 1: 70, Candidate 2: 70, Candidate 3: 105, Candidate 4: 70

Practice Level C

1–12: Sample answers:

1.

$$\begin{aligned} 3x + 8 &= 14 && \text{Given} \\ 3x &= 6 && \text{Subtr. Prop. of Equality} \\ x &= 2 && \text{Div. Prop. of Equality} \end{aligned}$$

2.

$$\begin{aligned} -12x &= 28 - 16x && \text{Given} \\ 4x &= 28 && \text{Add. Prop. of Equality} \\ x &= 7 && \text{Div. Prop. of Equality} \end{aligned}$$

3.

$$\begin{aligned} 7(x - 11) &= 12x - 122 && \text{Given} \\ 7x - 77 &= 12x - 122 && \text{Distributive Property} \\ -5x - 77 &= -122 && \text{Subtr. Prop. of Equality} \\ -5x &= -45 && \text{Add. Prop. of Equality} \\ x &= 9 && \text{Div. Prop. of Equality} \end{aligned}$$

4.

$$\begin{aligned} 4(3x + 6) &= 5(x - 5) && \text{Given} \\ 12x + 24 &= 5x - 25 && \text{Distributive Property} \\ 7x &= -49 && \text{Subtr. Prop. of Equality} \\ x &= -7 && \text{Div. Prop. of Equality} \end{aligned}$$

5.

$$\begin{aligned} 6(7x + 18) &= (x + 8)4 && \text{Given} \\ 42x + 108 &= 4x + 32 && \text{Distributive Property} \\ 38x &= -76 && \text{Subtr. Prop. of Equality} \\ x &= -2 && \text{Div. Prop. of Equality} \end{aligned}$$

6.

$$\begin{aligned} -11(x + 3) + 18 &= (8 - 3x)7 && \text{Given} \\ -11x - 33 + 18 &= 56 - 21x && \text{Distributive Property} \\ 10x &= 71 && \text{Add. Prop. of Equality} \\ x &= 7.1 && \text{Div. Prop. of Equality} \end{aligned}$$

7.

$$\begin{aligned} \frac{1}{4}(3x + 16) &= 7(9 - 2x) && \text{Given} \\ \frac{3}{4}x + 4 &= 63 - 14x && \text{Distributive Property} \\ \frac{59}{4}x + 4 &= 63 && \text{Add. Prop. of Equality} \\ \frac{59}{4}x &= 59 && \text{Subtr. Prop. of Equality} \\ x &= 4 && \text{Mult. Prop. of Equality} \end{aligned}$$