

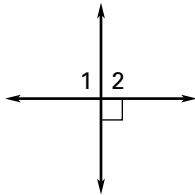
LESSON
3.6

Practice A

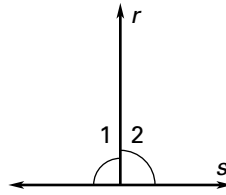
For use with pages 196–203

Write the theorem that justifies the statement.

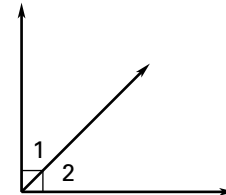
1. $\angle 1$ and $\angle 2$ are right angles.



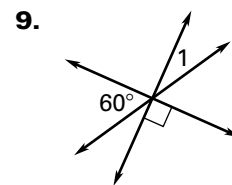
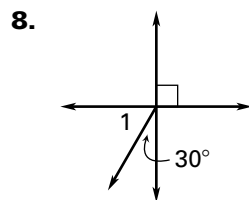
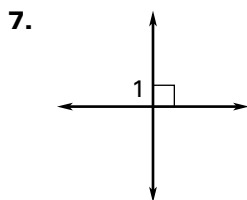
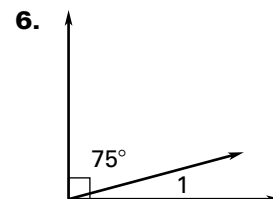
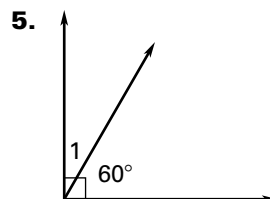
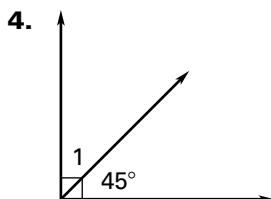
2. $r \perp s$



3. $\angle 1$ and $\angle 2$ are complementary.

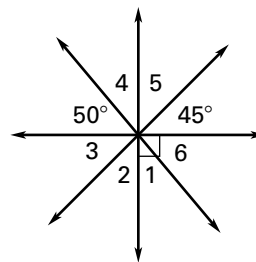


Find $m\angle 1$.



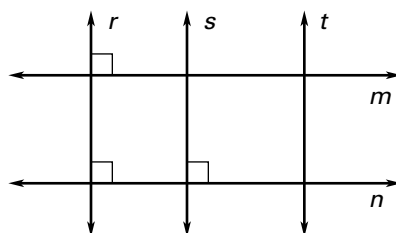
Find the measure of the indicated angle.

- | | |
|----------------|----------------|
| 10. $\angle 1$ | 11. $\angle 2$ |
| 12. $\angle 3$ | 13. $\angle 4$ |
| 14. $\angle 5$ | 15. $\angle 6$ |



In Exercises 16–18, use the diagram.

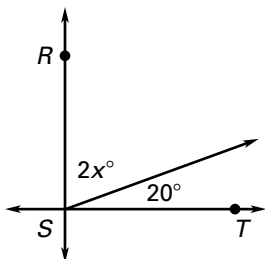
16. Is $r \parallel s$?
17. Is $m \parallel n$?
18. Is $r \parallel t$?



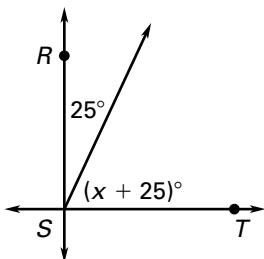
LESSON 3.6 **Practice A** *continued*
For use with pages 196–203

In the diagram, $\overleftrightarrow{RS} \perp \overleftrightarrow{ST}$. Find the value of x .

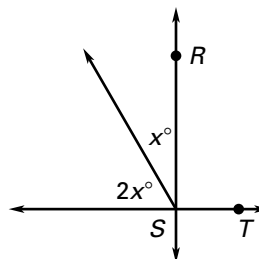
19.



20.

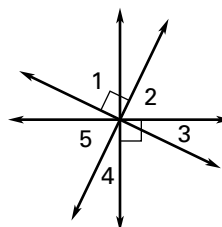


21.

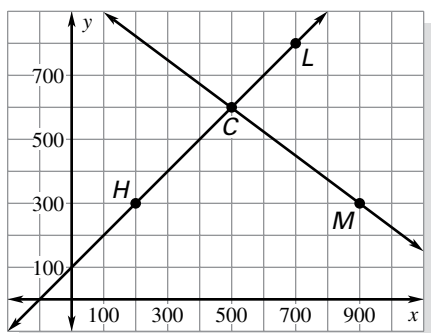


22. **Multiple Choice** Using the diagram, which two angles are complementary?

- A. $\angle 1$ and $\angle 2$
- B. $\angle 3$ and $\angle 4$
- C. $\angle 1$ and $\angle 5$
- D. $\angle 2$ and $\angle 4$



23. **Maps** A partial map of a town is drawn on a graph where units are measured in feet. Line \overleftrightarrow{HL} represents Main Street and line \overleftrightarrow{CM} represents 4th Avenue. Point L represents the library, point C represents the center of town, point H represents the high school and point M represents the medical center.



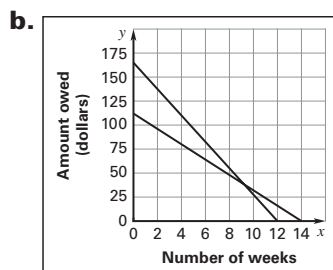
- a. Find the distance between the medical center to the high school.
- b. How far away is the medical center from the center of town along 4th Avenue?
- c. What distance do you walk if you go from the medical center to the library along 4th Avenue and Main Street? Round your answer to the nearest foot.
- d. Is 4th Avenue perpendicular to Main Street?

Lesson 3.5, continued

9. a. $AE \neq DB$ b. $-\frac{A}{B} = -\frac{D}{E}, B \neq 0, E \neq 0$

10. a. Your loan: $y = 112 - 8x$; the slope is -8 and represents paying your sister \$8 per week; the y -intercept is 112 and represents the initial amount of the loan.

Your brother's loan: $y = 165 - 13.75x$; the slope is -13.75 and represents paying your sister \$13.75 per week; the y -intercept is 165 and represents the initial amount of the loan.



Your brother will pay off his loan first. From the graph, the x -intercepts of both linear equations represent when you and your brother will pay off your loans. The x -intercept of the linear equation that represents your brother's loan is 12 and the x -intercept of the linear equation that represents your loan is 14. So, your brother will pay off his loan in 12 weeks and you will pay off your loan in 14 weeks. c. You can determine who will pay off the loan first by algebraically determining the x -intercept of each equation. d. The intersection of the two lines represents when you and your brother will owe your sister the same amount of money. e. Yes. After the third week, you have paid your sister \$24 and therefore you have to pay her \$88 more. Because you now want to pay \$11 a week, the equation that represents your loan is now $y = 88 - 11x$. It will take you 8 weeks to pay back \$88.50. So, it will take you a total of 11 weeks to pay off your loan, and you will pay off your loan first.

Lesson 3.6

Practice Level A

- Theorem 3.9
- Theorem 3.8
- Theorem 3.10
- 45°
- 30°
- 15°
- 90°
- 60°
- 30°
- 40°
- 45°
- 45°
- 40°
- 45°
- 50°
- yes
- yes
- no
- 35
- 40
- 30
- D
- a. 700 ft b. 500 ft c. 783 ft d. no

Practice Level B

- $r \perp s$; Theorem 3.8
- $\angle 1, \angle 2, \angle 3$, and $\angle 4$ are right angles; Theorem 3.9
- $\angle 1$ and $\angle 2$ are complementary; Theorem 3.10
- 65
- 25
- 30
- 105
- 28
- 50
- 90°
- 30°
- 60°
- 30°
- 30°
- 60
- no
- yes
- yes
- 2.8
- 4.2
- 4.5
- 3.2
- 3.6
- 4.5
- a. 90° b. 27°
- 500 ft
- 224 ft

Practice Level C

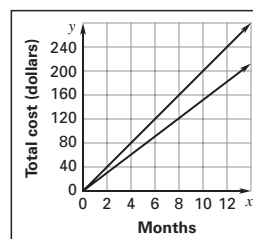
- 58°
- 16°
- 90°
- 25°
- 52°
- 25°
- 25°
- 65°
- 65°
- no
- no
- yes
- 15
- 18
- 21
- 20
- 12
- 15
- 4.9
- 3.6
- 6
- 5.8
- a. 0.7 mi b. 1.4 mi c. Even though the highway is closer, it would be shorter (1.4 miles) for the lost hikers to walk to the hiking trail than to the highway because the river is between the hikers and the highway. The shortest walking distance to the highway is 1.5 miles.

Review for Mastery

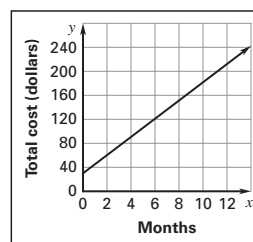
- 45
- 90
- 30
- about 3.5 units
- about 2.1 units

Problem Solving Workshop: Mixed Problem Solving

- a. Gym A: $y = 20x$, Gym B: $y = 15x$



- No; the slopes are different.
- It costs \$20 per month for a membership to Gym A and it costs \$15 a month for a membership to Gym B.
- $y = 15x + 30$



Yes; It is parallel to the line in part (a) for Gym B because they have the same slope.