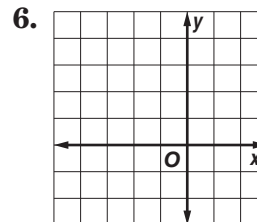


# 4 Chapter 4 Test, Form 3

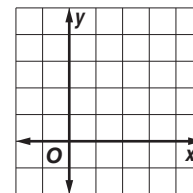
**For Questions 1 and 2, find the slope of the line passing through each pair of points. If the slope is undefined, write “undefined.”**

1.  $(-8, 7)$  and  $(5, -2)$  1. \_\_\_\_\_
2.  $(5, 9)$  and  $(5, -3)$  2. \_\_\_\_\_
3. Find the value of  $r$  so that the line through  $(-4, 3)$  and  $(r, -3)$  has a slope of  $\frac{2}{3}$ . 3. \_\_\_\_\_
4. Find the value of  $r$  so that the line through  $(r, 5)$  and  $(6, r)$  has a slope of  $\frac{5}{8}$ . 4. \_\_\_\_\_
5. In 1990, there were approximately 35,000 people in Lancaster. Five years later, the population was 38,452. Find the rate of change in the population. 5. \_\_\_\_\_

6. Graph  $y = -\frac{3}{4}x$ .



7. If an ostrich can run 15 kilometers in 15 minutes, how many kilometers can it run in an hour? 7. \_\_\_\_\_
8. Write the point-slope form of an equation of the line that has a slope of  $-\frac{3}{5}$  and passes through  $(2, 1)$ . 8. \_\_\_\_\_
9. Write an equation in standard form of the line that passes through  $(2, -3)$  and  $(-3, 7)$ . 9. \_\_\_\_\_
10. Graph a line that has an  $x$ -intercept of 5 and a slope of  $-\frac{3}{5}$ . 10. \_\_\_\_\_



11. Write  $y + 4 = -\frac{2}{3}(x - 9)$  in standard form. 11. \_\_\_\_\_
12. Write the point-slope form of the equation for the line that has  $x$ -intercept  $-3$  and  $y$ -intercept  $-2$ . 12. \_\_\_\_\_

# 4 Chapter 4 Test, Form 3 *(continued)*

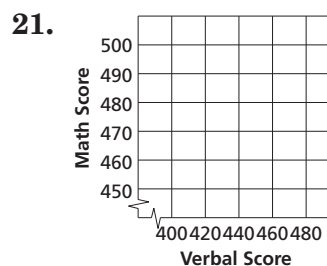
**For Questions 13–20, write an equation in slope-intercept form of the line satisfying the given conditions.**

- 13. has  $y$ -intercept  $-8$  and slope  $3$  13. \_\_\_\_\_
- 14. has slope  $\frac{5}{2}$  and passes through  $(4, -1)$  14. \_\_\_\_\_
- 15. passes through  $(-3, 7)$  and  $(2, 4)$  15. \_\_\_\_\_
- 16. is horizontal and passes through  $(-4, 6)$  16. \_\_\_\_\_
- 17. is parallel to the  $y$ -axis and has an  $x$ -intercept of  $3$  17. \_\_\_\_\_
- 18. is perpendicular to  $4y = 3x - 8$  and passes through  $(-12, 7)$  18. \_\_\_\_\_
- 19. is parallel to  $3x - 5y = 7$  and passes through  $(0, -6)$  19. \_\_\_\_\_
- 20. is perpendicular to the  $y$ -axis and passes through  $(-2, 5)$  20. \_\_\_\_\_

**For Questions 21–23, use the data in the table.**

21. Make a scatter plot relating the verbal scores and the math scores.

State Graduation Scores		
Year	Verbal Score	Math Score
1970	460	488
1980	424	466
1990	410	463
2000	420	460



- 22. Does the scatter plot in Question 21 show a *positive*, a *negative*, or *no correlation*? What does that relationship represent? 22. \_\_\_\_\_
- 23. Write the equation for a line of fit. Predict the corresponding math score for a verbal score of 445. 23. \_\_\_\_\_
- 24. A rental car company charges \$52.99 per day, including 200 free kilometers. There is a charge of \$0.12/km for additional kilometers. Write a linear equation that models this situation. 24. \_\_\_\_\_
- 25. Write the slope-intercept form of  $y + 3 = -0.5(x - 10)$ . 25. \_\_\_\_\_

**Bonus** The area of a circle varies directly as the square of the radius. If the radius is tripled, by what factor will the area increase? **B:** \_\_\_\_\_