

Practice Chapter 5 Test

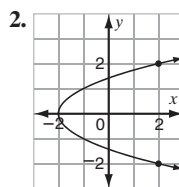
Name _____ Date _____

Tell whether each relation represents a linear function. Find the slope of all linear functions.

1.

x	y
-2	3
-1	4
0	5
1	6
2	7

yes; slope = 1



no; not a linear function

3. $y = \frac{7}{8}x + 9$

yes; slope = $\frac{7}{8}$

Find the slope of the line that connects the given points. Describe the line.

4. (3, 9) and (12, 1)

$m = -\frac{8}{9}$; Line slants down from left to right.

5. (-2, 7) and (4, 10)

slope = $\frac{1}{2}$; Line slants up from left to right.

Explain whether each of the following represents a direct variation.

If so, state the constant of variation. **Answers may vary. Check students' work.**

6. $y + 15x = 0$

Yes, the equation can be written as $y = -15x$. The constant of variation is -15.

7. $4x + 7y = -4$

No, the equation cannot be written as $y = kx$.

8. $4y + 2x = 0$

Yes, the equation can be written as $y = -\frac{1}{2}x$. The constant of variation is $-\frac{1}{2}$.

Write an equation in slope-intercept form for the line with the given slope and y-intercept.

9. slope: 7; y-intercept: -19

$y = 7x - 19$

10. slope: $-\frac{4}{5}$; y-intercept: $\frac{2}{3}$

$y = -\frac{4}{5}x + \frac{2}{3}$

11. slope: 9.3; y-intercept: -11.25

$y = 9.3x - 11.25$

Identify the slope and y-intercept of the line whose equation is given.

Graph the line on a separate sheet of paper. **Check students' graphs.**

12. $y = -7x + 3$

slope = -7
y-intercept = 3

13. $y = 5x - 2$

slope = 5
y-intercept = -2

14. $7x + 5y = -20$

slope = $-\frac{7}{5}$
y-intercept = -4

15. $2x - 6y = -30$

slope = $\frac{1}{3}$
y-intercept = 5

Write an equation in point-slope form of a line that passes through the given points. **Answers may vary. Check students' answers.**

16. (1, 7) and (-2, 10)

$m = \frac{10 - 7}{-2 - 1} = \frac{3}{-3} = -1$
 $y - 7 = -1(x - 1)$

17. (2, -5) and (5, -1)

$m = \frac{-1 - (-5)}{5 - 2} = \frac{4}{3}$
 $y + 5 = \frac{4}{3}(x - 2)$

18. (-9, -5) and (-7, -6)

$m = \frac{-6 - (-5)}{-7 - (-9)} = \frac{-1}{2}$
 $y + 5 = -\frac{1}{2}(x + 9)$

Use after

SOURCEBOOK Lessons 5-1-5-8, pages 116-139.

Chapter 5 137

Practice Book

CHAPTER TEST

Objective

- To assess students' mastery of the objectives of Chapter 5

Background See *Comprehensive Assessment*, pages xxiii-xxv.

Preparing for Assessment

Remind students that in Chapter 5, they learned to recognize linear functions, given graphs and equations, and to identify when a linear function is a direct variation. Students wrote equations of lines in point-slope form and slope-intercept form. They developed graphing skills to include graphing lines and inequalities on a coordinate plane. Students also explored families of absolute-value functions. Explain that the purpose of this test is to assess students' understanding. It may be helpful to review some Chapter 5 lessons before administering the *Practice Chapter 5 Test*.

Test-Taking Tip

Provide students with sufficient time for a test so they can work calmly, accurately, and efficiently. Help those students who consistently need more time to learn to approach a test strategically so they can use test time efficiently.

Using the Assessment

Practice Chapter 5 Test Use Practice Book pp. 137-138

- Before administering the free-response *Practice Chapter 5 Test*, tell students how they are going to be assessed and the criteria that will be applied in judging their performance.
- Distribute the *Practice Chapter 5 Test*, and allow students time to scan the pages to get a feel for the tasks they will be asked to perform.



Following the Assessment

Item Analysis

Use Teacher's Edition p. I48E

■ The items in *Practice Chapter 5 Test* are correlated to instructional objectives, associated common error diagnoses, and recommended prescriptive tools.

Chapter 5 Post Test

Use Teacher's Edition p. I48F

■ After using recommended prescriptive tools for *Practice Chapter 5 Test*, administer *Chapter 5 Post Test* to reassess. Use the Item Analysis on page 148E to identify skills and concepts in which students continue to have difficulty. Revisit appropriate prescriptive tools as necessary.

Differentiated Instruction

⦿ Build tests to address varying ability levels based on the results of *Practice Chapter 5 Test* and *Chapter 5 Post Test* using additional test items available on **Practice/Test Generator CD-ROM**.



The *Chapter 5 Post Test* can be placed in students' *Math Portfolios*.

Write each equation in the form given.

19. $2x + 6y = 1$; slope-intercept form

$$6y = -2x + 1; y = -\frac{1}{3}x + \frac{1}{6}$$

20. $y - 2 = \frac{1}{4}(x + 8)$; standard form

$$4y - 8 = x + 8 \\ x - 4y = -16$$

Write an equation in slope-intercept form for the line that is described.

21. perpendicular to $2x + y = -5$ and passing through $(1, 1)$

$$y = -2x - 5; y - 1 = \frac{1}{2}(x - 1)$$

$$y = \frac{1}{2}x + \frac{1}{2}$$

22. parallel to $4x + 3y = 5$ with a y-intercept of -2

$$y = -\frac{4}{3}x + \frac{5}{3}; m = -\frac{4}{3}$$

$$y = -\frac{4}{3}x - 2$$

Graph each linear inequality on a separate sheet of paper. Describe the solution set. **Check students' graphs.**

23. $x + y < -3$

Boundary: $y = -x - 3$
dashed line
shaded below

24. $5x \leq 15$

Boundary: $x = 3$
solid line
shaded left

25. $-2y \leq 16$

Boundary: $y = -8$
solid line
shaded above

26. $6x - y < 2$

Boundary: $y = 6x - 2$
dashed line
shaded above

Graph each absolute-value function on grid paper. Identify the vertex, axis of symmetry, x- and y-intercepts, domain, and range. Tell whether the graph opens up or down. **Check students' graphs.**

27. $y = |x + 9|$

vertex: $(-9, 0)$
axis of symmetry: $x = -9$
x-intercept: -9
y-intercept: 9
domain: all real numbers
range: $y \geq 0$; opens up

28. $y = -|x| - 4$

vertex: $(0, -4)$
axis of symmetry: $x = 0$
x-intercept: none
y-intercept: -4
domain: all real numbers
range: $y \leq -4$; opens down

29. $y = |x - 3| + 6$

vertex: $(3, 6)$
axis of symmetry: $x = 3$
x-intercept: none
y-intercept: 9
domain: all real numbers
range: $y \geq 6$; opens up

Solve. Show your work.

30. The cost of a spice varies directly with its weight. If 5.2 ounces of spice cost \$2.90, find the cost of 7.8 ounces of the spice.

$$k = \frac{y}{x} = \frac{2.9}{5.2}; y = kx; y = \frac{2.9}{5.2}(7.8) = 4.35$$

The cost of 7.8 oz of spice is \$4.35.

31. What is the equation of a line that is parallel to the line that passes through the points $(3, 7)$ and $(3, -10)$ and that contains the point $(9, 7)$?

The x-values of the first two points are the same, so the line is vertical. The equation of the line is $x = 9$.

Tell About It

Explain how you solve the problem. Show all your work. **Answers may vary. Check students' work.**

32. How can you determine which of the points below are solutions to the inequality

$$5y < 3x - 8? (9, -4), (-1, 6), (-1, -20), \text{ and } (2, 15)$$

Graph the inequality on a coordinate plane, and then locate the points to see which are in the shaded region. Only $(9, -4)$ and $(-1, -20)$ are in the shaded region. So $(9, -4)$ and $(-1, -20)$ are solutions to the inequality $5y < 3x - 8$.

For More Exercises



Practice/Test Generator



■ Build your own quiz.