Chapter Standardized Test

TEST-TAKING STRATEGY Avoid spending too much time on one question. Skip questions that are too difficult for you, and spend no more than a few minutes on each question.

1. MULTIPLE CHOICE What is an equation of the line that passes through the points $(-4, 2)$ and $(6, 6)$?

A $y = \frac{2}{5}x + \frac{18}{5}$ **B** $y = \frac{2}{5}x - \frac{12}{5}$

**C** $y = 2x - 6$ **D** $y = \frac{2}{5}x - \frac{18}{5}$

E $y = 2x + 18$

2. MULTIPLE CHOICE An equation of the line perpendicular to the line $y = -2x - 3$ with a y-intercept of $-\frac{3}{4}$ is __?__ .

A $y = -2x + \frac{3}{4}$ **B** $y = -2x - \frac{3}{4}$

C $y = 2x - \frac{3}{4}$ **D** $y = \frac{1}{2}x - \frac{3}{4}$

E $y = -\frac{1}{2}x + \frac{3}{4}$

3. MULTIPLE CHOICE A line with a slope of -1 passes through the point $(2, -1)$. If $(-4, p)$ is another point on the line, what is the value of p?

A -5 **B** -1 **C** 1
D 2 **E** 5

4. MULTIPLE CHOICE What is an equation of a line that best fits the scatter plot?
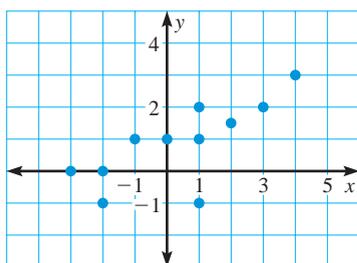
A $y = \frac{1}{2}x + 1$ **B** $y = 1$

C $y = -\frac{1}{2}x + 1$ **D** $y = x + 1$

E $y = x - 1$

5. MULTIPLE CHOICE A bike rental shop charges $8 to rent a bike, plus $1.50 for every half hour you ride. If the shop charges you and your friend a total of $25, how many hours did you each ride? (Assume that you each rode a separate bike for an equal amount of time.)

A 1 **B** 1.5
C 2 **D** 2.5
E 3

6. MULTIPLE CHOICE What is an equation of the line that passes through the point $(4, -5)$ and has a slope of $\frac{1}{2}$?

A $y = x - 5$ **B** $y = -\frac{1}{2}x + 7$

C $y = \frac{1}{2}x + 7$ **D** $y = -\frac{1}{2}x - 7$

E $y = \frac{1}{2}x - 7$

7. MULTIPLE CHOICE An equation of the line whose x-intercept is 3 and whose y-intercept is 5 is __?__ .

A $y = \frac{5}{3}x + 5$ **B** $y = -\frac{3}{5}x + 5$

C $y = -\frac{5}{3}x + 5$ **D** $y = \frac{3}{5}x + 5$

E $y = -\frac{5}{3}x - 5$

8. MULTIPLE CHOICE Which two points lie on the line $y = -2x + 7$?

A $(0, 7), (1, -5)$ **B** $(4, 0), (-2, -8)$
C $(-3, -4), (2, 6)$ **D** $(-1, 9), (3, 1)$
E $(2, -1), (-3, -11)$

9. MULTIPLE CHOICE Which equation is in standard form with integer coefficients?

A $x - \frac{1}{2}y = \frac{5}{2}$ **B** $y = 2x + -5$

C $y = -5 + 2x$ **D** $x = \frac{1}{2}y + \frac{5}{2}$

E $-2x + y = -5$

10. **MULTIPLE CHOICE** An equation in standard form of the line that passes through the point $(-6, 1)$ and has a slope of -2 is _?_.

    (A) $2x + y = 13$ (B) $2x - y = 11$

    (C) $2x + y = -11$ (D) $2x + y = -13$

    (E) $2x - y = -13$

11. **MULTIPLE CHOICE** An equation in standard form of a line that is perpendicular to the line that passes through the points $(3, -4)$ and $(6, 1)$ is _?_.

    (A) $5x + 3y - 6 = 0$ (B) $x + 3y - 6 = 0$

    (C) $y = \dfrac{-3}{5}x + 6$ (D) $3x + 5y = 6$

    (E) $5y = -3x + 6$

QUANTITATIVE COMPARISON In Exercises 12–14, choose the statement that is true.

    (A) The number in Column A is greater.

    (B) The number in Column B is greater.

    (C) The two numbers are equal.

    (D) The relationship cannot be determined from the information given.

	Column A	Column B
12.	slope of $2x + 3y = 12$	slope of $-5y = 6 + 10x$
13.	y-intercept of $2x + 3y = 12$	y-intercept of $-5y = 6 + 10x$
14.	x-intercept of $\frac{2}{3}x + 6y = 8$	x-intercept of $3y = -7 + 2x$

MULTI-STEP PROBLEM In Exercises 15–20, all students in a class were surveyed after they took a chapter test. The teacher wanted to know if studying at home produced good test grades. After the survey was taken, the following data were recorded in a table.

Hours spent studying the chapter	0	.25	.5	.75	1	1.5	2	3	5	7
Average grade on the chapter test	29	32	35	38	40	47	54	66	79	89

15. Make a scatter plot of the data.

16. Make a linear model of the average grade on the chapter test based on the number of hours spent studying the chapter at home.

17. If you study for four hours, approximately what grade can you expect to earn on the chapter test according to the model?

18. Use linear extrapolation to estimate the number of hours needed to earn a grade of 93 on the chapter test.

19. Use linear interpolation to find the average grade on the chapter test by students who study for 4.5 hours.

20. *Writing* If you were the parent of a child studying this chapter, what advice would you give your child about studying at home for the chapter test? Explain your reasoning.