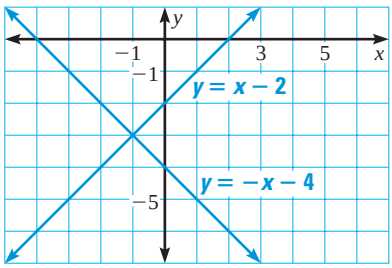
CHAPTER 7

# Chapter Standardized Test

**TEST-TAKING STRATEGY** Go back and check as much of your work as you can.

**1. MULTIPLE CHOICE** Which point represents the solution of the system of linear equations?

$y = x - 2$
$y = -x - 4$




Ⓐ $(2, 0)$ Ⓑ $(-3, -1)$ Ⓒ $(1, -1)$
Ⓓ $(-1, -3)$ Ⓔ $(0, -4)$

**2. MULTIPLE CHOICE** What is the solution of the system of linear equations?

$\frac{4}{5}x + \frac{1}{2}y = 16$
$x + y = 24$

Ⓐ $(8, 16)$ Ⓑ $(10, 14)$
Ⓒ $\left(\frac{40}{3}, \frac{32}{3}\right)$ Ⓓ $\left(\frac{41}{4}, \frac{55}{4}\right)$
Ⓔ $(2, 22)$

**3. MULTIPLE CHOICE** If $x + y = 15$ and $x - y = -19$, then $xy =$ ?.

Ⓐ $-76$ Ⓑ $-68$ Ⓒ $-34$
Ⓓ $15$ Ⓔ $34$

**4. MULTIPLE CHOICE** If $-2x + 7y = -8$ and $x - 6y = 10$, then $x - y =$ ?.

Ⓐ $-2$ Ⓑ $0$ Ⓒ $\frac{3}{2}$
Ⓓ $\frac{5}{2}$ Ⓔ $4$

**5. MULTIPLE CHOICE** If $-\frac{3}{4}x + \frac{7}{10}y = 5$ and $\frac{1}{4}x - \frac{3}{10}y = -5$, then $x + y =$ ?.

Ⓐ $-90$ Ⓑ $-10$ Ⓒ $-\frac{25}{8}$
Ⓓ $10$ Ⓔ $90$

**6. MULTIPLE CHOICE** If $y = 5x - 2$, then $-3y =$ ?.

Ⓐ $5x - 6$ Ⓑ $15x - 6$ Ⓒ $15x + 6$
Ⓓ $-15x - 6$ Ⓔ $-15x + 6$

**7. MULTIPLE CHOICE** Your teacher is giving a test worth 150 points. There is a total of 42 five-point and two-point questions. How many two-point questions are on the test?

Ⓐ 18 Ⓑ 20 Ⓒ 22
Ⓓ 24 Ⓔ 26

**8. MULTIPLE CHOICE** How many solutions does the linear system have?

$4x - 2y = 6$
$7x + y = 15$

Ⓐ None Ⓑ Exactly one Ⓒ Two
Ⓓ Infinitely many Ⓔ Cannot be determined

**9. MULTIPLE CHOICE** How many solutions does the linear system have?

$y = 2x + 4$
$y = 2$

Ⓐ None Ⓑ Exactly one Ⓒ Two
Ⓓ Infinitely many Ⓔ Cannot be determined

**10. MULTIPLE CHOICE** The ordered pair $(3, 4)$ is a solution of ?.

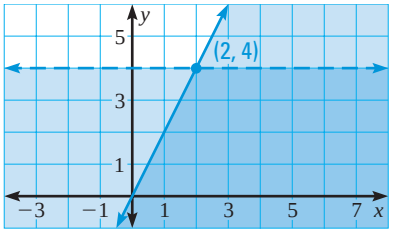
Ⓐ $x + y = 7$, $x + 2y = 11$ Ⓑ $x - y = 1$, $2x - y = 9$
Ⓒ $x - y = 1$, $2x + y = 10$ Ⓓ $x + y = 7$, $2x - 2y = 14$
Ⓔ Cannot be determined

**11. MULTIPLE CHOICE** Which point is a solution of the system of linear inequalities?

$y < -x$
$y < x$

Ⓐ $(2, 6)$ Ⓑ $(6, -2)$ Ⓒ $(-2, 6)$
Ⓓ $(-1, -6)$ Ⓔ $(-6, -1)$

**12. MULTIPLE CHOICE** Which system of inequalities is represented by the graph at the right?



Ex. 12

Ⓐ $y \leq 4$, $y < 2x + 1$ Ⓑ $y < 4$, $y \geq 2x$ Ⓒ $y < 4$, $y \leq 2x$

Ⓓ $y < 4$, $y < 2x$ Ⓔ $y < 4$, $y \leq 2x + 1$

**13. MULTIPLE CHOICE** A ship is traveling toward a lighthouse following the line $4x - y = 10$. Another ship is traveling toward the lighthouse following the line $x + y = 5$. What are the coordinates of the lighthouse?

Ⓐ $(3, -2)$ Ⓑ $(2, 3)$ Ⓒ $(-2, -3)$ Ⓓ $(-2, 3)$ Ⓔ $(3, 2)$

**14. MULTIPLE CHOICE** Which point lies on the graph of the system?

$3y = 3$
$x + 2y = 4$

Ⓐ $(3, 1)$ Ⓑ $(2, 1)$ Ⓒ $(4, 1)$

Ⓓ $\left(\frac{3}{2}, 1\right)$ Ⓔ Cannot be determined

**15. QUANTITATIVE COMPARISON** Solve the linear system. Then choose the statement below that is true about the solution of the system.

$2x + 6y = 13$
$x - 4y = 3$

Ⓐ The value of $x$ is greater. Ⓑ The value of $y$ is greater.

Ⓒ The values of $x$ and $y$ are equal.

Ⓓ The relationship cannot be determined from the given information.

**16. MULTI-STEP PROBLEM** The members of the city cultural center have decided to put on a play once a night for a week. Their auditorium holds 500 people. By selling tickets, the members would like to raise $3150 every night to cover all expenses. Let $x$ represent the number of adult tickets sold at $7.50 each. Let $y$ represent the number of student tickets sold at $4.50 each.

**a.** Write a linear equation that models the $3150 income the members hope to raise from the sale of adult and student tickets for one night.

**b.** Write a second linear equation that models the number of tickets they sell if all 500 seats are filled for a single night's performance.

**c.** If all 500 seats are filled for a performance, how many of each type of ticket must have been sold for the members to raise exactly $3150?

**d.** At one performance there were three times as many adult tickets sold as student tickets. If there were 400 tickets sold, how much below the goal of $3150 did the ticket sales fall?

**e.** *Writing* At another performance, only adults attended. The members know they raised at least $3150 that night. Find the possible numbers of tickets that could have been sold. Explain your method.