

**Algebra 1 Test Review: Chapter 6 A: Systems of Equations and Inequalities.
Spiral Chapters 1-5**

- *Chapter Review is due on the day of the test.*
- *Review will not be graded unless answers are written on separate paper.*
- *In order to be eligible to retest, this review must be complete, accurate, and turned in.*
- **NO WORK NO CREDIT**

1. Solve the system $\begin{cases} 3x + 4y = -36 \\ -2x + 4y = -16 \end{cases}$ by graphing.

Solve the system by graphing.

2. $\begin{cases} y = -x - 9 \\ 3x - y = -11 \end{cases}$

3. $\begin{cases} -2x + y + 1 = 0 \\ 4x - 2y = -2 \end{cases}$

4. $\begin{cases} -4x - y - 5 = 0 \\ 12x - 3y = -15 \end{cases}$

5A. Tell whether $(2, 7)$ is a solution of $\begin{cases} y \geq 4x \\ y < x + 2 \end{cases}$.

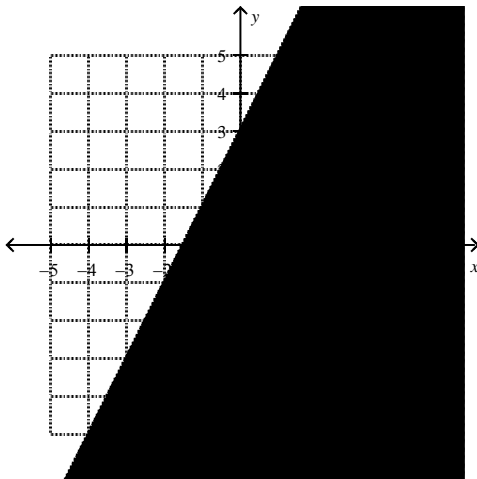
5B. Tell whether $(3, -1)$ is a solution of $\begin{cases} x - 2y = 5 \\ 2x - y = 7 \end{cases}$

6. Tell whether $(8, 5)$ is a solution of $y > x + 7$.

7. Tell whether $(5, 6)$ is a solution of $y < 5x + 8$.

8. Tony has \$18 to buy apples and bananas for a fruit salad. Apples cost \$2 per pound and bananas cost \$1 per pound. Write and graph an inequality to describe the situation. Then give two possible combinations of pounds of apples and bananas that Tony can buy.

9. Write an inequality to represent the graph.



10. Write the inequality in slope intercept form: A) $x - 3y \leq 15$ B) $2x + 4y > 16$

11. The sum of the digits of a two-digit number is 8. If the number is multiplied by 4, the result is 104. Write system of equations. Make sure to define your variables. Optional: What is the number?!

12. A rental car agency charges a flat fee of \$32.00 plus \$3.00 per day to rent a certain car. Another agency charges a fee of \$30.50 plus \$3.25 per day to rent the same car.

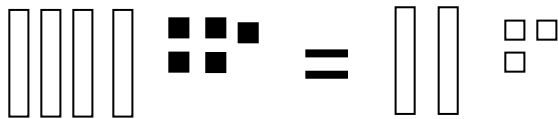
a. Write a system of equations to represent the cost c for renting a car at each agency for d days.

SPIRAL REVIEW

13. The length of a rectangle is 7.8 cm more than 4 times the width. The perimeter of the rectangle is 94.6 cm. Write the system of equations to model this relation. Optional: What are its dimensions?
14. A toy company's total payment for salaries for the first two months of 2005 is \$21,894. Write and solve an equation to find the salaries for the second month if the first month's salaries are \$10,205.
15. Solve $3n = 42$.
16. Solve $\frac{2}{10}b = 99$.
17. The time between a flash of lightning and the sound of its thunder can be used to estimate the distance from a lightning strike. The distance from the strike is the number of seconds between seeing the flash and hearing the thunder divided by 5. Suppose you are 17 miles from a lightning strike. Write and solve an equation to find how many seconds there would be between the flash and thunder.
18. Solve $44 = 14 - 2a$.
19. Solve $43a + 10 - 26a = 27$.
20. Sara needs to take a taxi to get to the movies. The taxi charges \$4.00 for the first mile, and then \$2.75 for each mile after that. If the total charge is \$20.50, then how far was Sara's taxi ride to the movie?
21. Solve $50q - 43 = 52q - 81$.
22. Solve $n - 8 + n = 1 - 4n$.
23. Solve $-6m - 6 + 8m = -5 + 2m - 1$. Tell whether the equation has infinitely many solutions or no solutions.
24. A video store charges a monthly membership fee of \$7.50, but the charge to rent each movie is only \$1.00 per movie. Another store has no membership fee, but it costs \$2.50 to rent each movie. How many movies need to be rented each month for the total fees to be the same from either company?
25. If $(9, 2)$ is a solution to the equation $2x - 3y = 24$, what is the value of y ?
26. Determine the constant of variation, k , and write the direct variation problem.

x	y
6	24
18	72
54	238
162	648

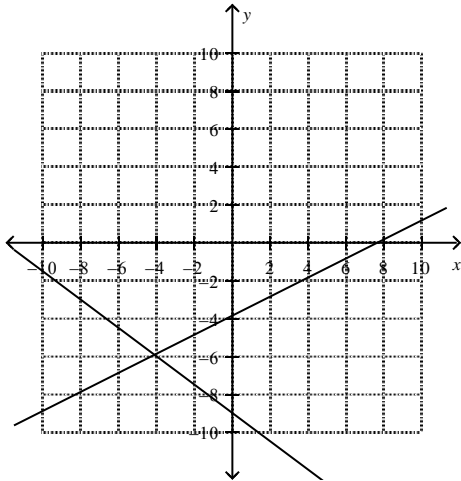
27. Solve the relation shown with algebra tiles. Set up an equation and solve algebraically:



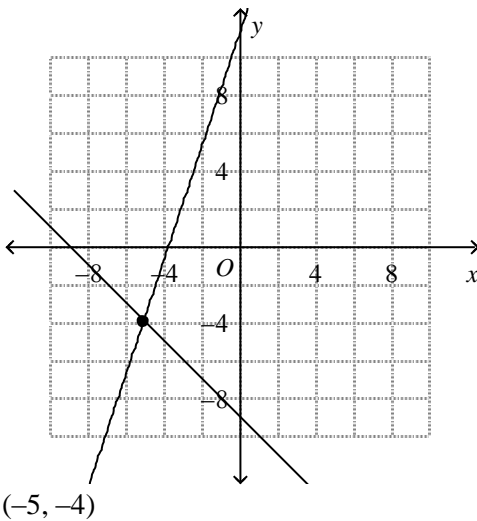
- **You will want to be familiar with how a function may be represented: mapping, graphed, domain, and range.**
- **Be able to write an equation that represents a situation (application problems)**
- **ID off a graph domain and range**
- **understand the what the dependent and independent relationships are**
- **given a domain what is the corresponding range**
- **remember slope – rise/run and how the ratio affects the appearance of the graph**

Chapter 6A Review Solutions: Answers have not been verified for accuracy; please check with your instructor if in doubt!

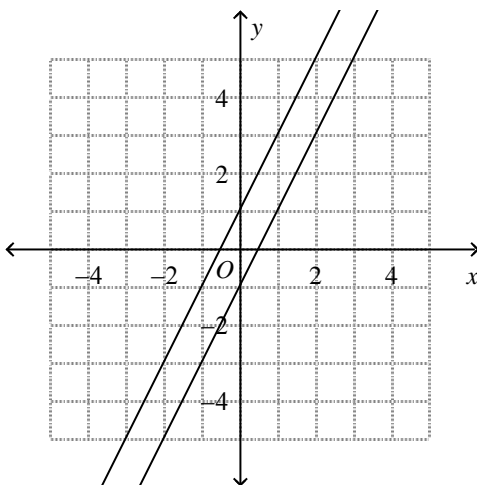
1. $(-4, -6)$



2.

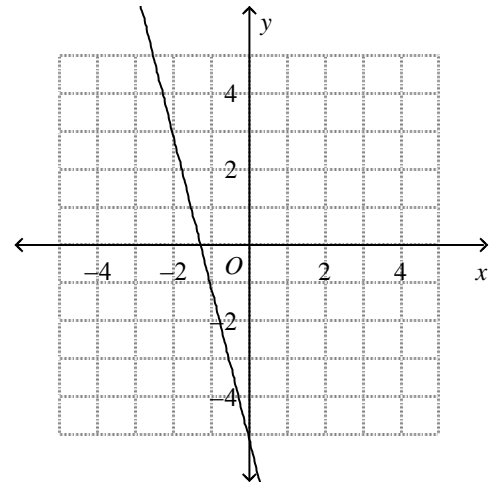


3.



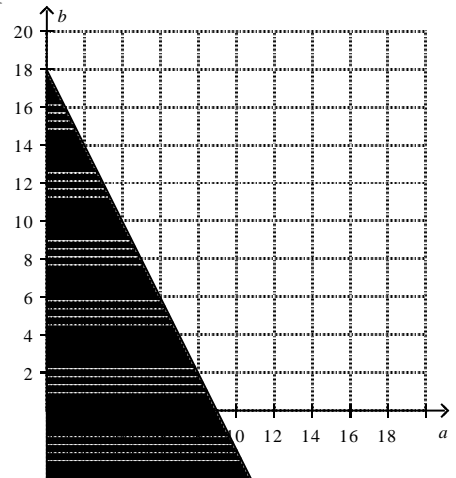
no solutions

4.



infinite solutions

5. No, $(2, 7)$ is not a solution of the system.
Yes, $(3, -1)$ is a solution to the system.
6. No, $(8, 5)$ is not a solution of $y > x + 7$.
7. Yes, $(5, 6)$ is a solution of $y < 5x + 8$.
8. $2a + b \leq 18$; 2 pounds of apples and 12 pounds of bananas or 4 pounds of apples and 2 pounds of bananas.



9. $y < 2x + 3$
10. A) $y \geq \frac{1}{3}x - 5$
B) $y > \frac{-1}{2}x + 4$
11.
$$\begin{cases} x + y = 8 \\ 4(10x + y) = 104 \end{cases}$$

The number is 26.

SPIRAL REVIEW

12. ANS:

$$\mathbf{a.} \begin{cases} c = 3.00d + 32.00 \\ c = 3.25d + 30.50 \end{cases}$$

b. 6

13. ANS:

length = 39.4 cm; width = 7.9 cm

14. ANS:

$$10,205 + x = 21,894$$

The salaries for the second month are \$11,689.

15. $n = 14$

16. $b = 495$

17. $\frac{t}{5} = d$, so t is about 85 seconds.

18. $a = -15$

19. $a = 1$

20. 7 miles

21. $q = 19$

22. $n = 1\frac{1}{2}$

23. Infinitely many solutions

24. 5 movies

25. $y=2$

26. $k=4, y=4x$

27. $4x-5=2x+3; x=4$