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## Unit 4 Test Alg 1

## True/False

Indicate whether the statement is true or false.
$\qquad$ 1. True or false?

The graph shows the solution to the system $y=4 x-2$ and $\frac{1}{2} y=2 x+1$.


## Multiple Choice

Identify the choice that best completes the statement or answers the question. Write the letter of your answer on the line provided to the left.
$\qquad$ 2. Tom has a collection of 30 CDs and Nita has a collection of 10 CDs . Tom is adding 3 CDs a month to his collection while Nita is adding 7 CDs a month to her collection. Find the number of months after which they will have the same number of CDs.
a. 2 months
b. 3 months
c. 5 months
d. 45 months

## What is the solution of the system? Use substitution.

$\qquad$ 3. $6 x-2 y=6$
$2 x-y=7$
a. $(-4,-15)$
b. $(2,3)$
c. $(2,-3)$
d. $(-2,-8)$

How many solutions does the system have?
$\qquad$ 4. $x=3 y-4$
$5 x-15 y=-20$
a. one solution
c. infinitely many solutions
b. two solutions
d. no solution
5. Which solution is best found solving the system by substitution over graphing?
a. $(2,-5)$
b. $(0,0)$
c. $\left(\frac{6}{11},-\frac{9}{11}\right)$
d. $\left(-10,-\frac{1}{2}\right)$
6. A corner store sells two kinds of baked goods: cakes and pies. A cake costs $\$ 13$ and a pie costs $\$ 10$. In one day, the store sold 11 baked goods for a total of $\$ 134$. How many cakes did they sell?
a. 5 cakes
b. 8 cakes
c. 11 cakes
d. 3 cakes

What is the solution of the system? Use elimination.
7. $2 x-y=2$
$2 x+y=2$
a. $(-1,0)$
b. $(0,1)$
c. $(0,-1)$
d. $(1,0)$

What is the solution of the system? Use elimination.
8. $5 x=-30+5 y$
$20 y=103+3 x$
a. $(5,20)$
b. $(5,-1)$
c. $(-1,5)$
d. $(-1,4)$

Which inequality represents the graph?
$\qquad$ 9.

a. $y \leq-3 x-5$
b. $y \geq-3 x+5$
c. $y \geq-3 x-5$
d. $y \leq-3 x+5$
$\qquad$ 10.

a. $\quad y>1$
b. $\quad x \geq 1$
c. $y \geq 1$
d. $x>1$

Which ordered pair is a solution of the inequality?
$\qquad$ 11. $2 y+6<6 x$
a. $(5,15)$
b. $(3,-1)$
c. $(3,6)$
d. $(0,5)$
12. You have $\$ 47$ to spend on music and movie downloads. Each album download costs $\$ 5$ and each movie download costs $\$ 9$. Write and graph a linear inequality that represents this situation. Let $x$ represent the number of albums and $y$ the number of movies.
a. $5 x+9 y \geq 47$

c. $\quad 9 x+5 y \geq 47$

b. $9 x+5 y \leq 47$

d. $5 x+9 y \leq 47$

13. Which inequality will use a solid line in its solution graph?
a. $y>-3 x-5$
b. $y>x$
c. $y \leq 4 x+1$
d. $y<2 x$
$\qquad$

What system of inequalities is represented by the graph?
$\qquad$ 14.

a. $y \geq x-2$
$y \geq-3 x-6$
c. $y \leq x-2$

$$
y \leq-3 x-6
$$

b. $y \leq x+3$
$y \geq 2 x-6$
d. $y \geq x+3$
$y \leq 2 x-6$

Short Answer: Show all work for credit. Write your final answer on the line provided.
What is the solution of the system? Use a graph.
15. $y=5 x+1$
$y=x-3$

Solution: $\qquad$


What is the solution of the system? Use a graph.
16. $y=-2 x+3$
$y=-2 x-3$

Solution:


How many solutions does the system have?
17. $y=4 x+6$
$4 y-16 x=12$

Number of solutions: $\qquad$
What is the solution of the system? Use substitution.
18. $y=3 x+8$
$y=4 x$

Solution: $\qquad$

What is the solution of the system? Use elimination.
19. $4 x+y=-16$
$x+3 y=7$

Solution: $\qquad$
Graph the inequality.
20. $y>-4 x+5$

21. $4 x+2 y \geq 12$


What is the graph of the inequality in the coordinate plane?
22. $y<1$

23. What is the graph of the system?

24. Kendra owns a restaurant. She charges $\$ 3.00$ for 2 eggs and one piece of toast, and $\$ 1.80$ for one egg and one piece of toast. How much does Kendra charge for an egg? A piece of toast?

Cost for an egg: $\qquad$ Cost for a piece of toast:

## Unit 4 Test Alg 1 <br> Answer Section

## TRUE/FALSE

1. ANS: T

PTS: 1
TOP: 4-1 Example 2 Graph Systems of Equations With Infinitely Many Solutions or No Solution

## MULTIPLE CHOICE

2. ANS: C PTS: 1 TOP: 4-1 Example 3 Write a System of Equations
3. ANS: A PTS: 1

TOP: 4-2 Example 1 Solve Systems of Equations Using Substitution
4. ANS: C PTS: 1

TOP: 4-2 Example 3 Systems With Infinitely Many Solutions or No Solution
5. ANS: C PTS: 1

TOP: 4-2 Example 2 Compare Graphing and Substitution Methods
6. ANS: B PTS: 1 TOP: 4-2 Example 4 Model Using Systems of Equations
7. ANS: D PTS: 1 TOP: 4-3 Example 1 Solve a System of Equations by Adding
8. ANS: C PTS: 1

TOP: 4-3 Example 2 Understand Equivalent Systems of Equations
9. ANS: D PTS: 1 TOP: 4-4 Example 3 Write an Inequality From a Graph
10. ANS: D PTS: 1 TOP: 4-4 Example 3 Write an Inequality From a Graph
11. ANS: B PTS: 1

TOP: 4-4 Example 1 Understand an Inequality in Two Variables
12. ANS: D PTS: 1 TOP: 4-4 Example 2 Rewrite an Inequality to Graph It
13. ANS: C PTS: 1

TOP: 4-4 Example 4 Inequalities in One Variable in the Coordinate Plane
14. ANS: C PTS: 1

TOP: 4-5 Example 2 Write a System of Inequalities from a Graph

## SHORT ANSWER

15. ANS:


PTS: 1 TOP: 4-1 Example 1 Solve a System of Equations by Graphing
16. ANS:

no solutions
PTS: 1
TOP: 4-1 Example 2 Graph Systems of Equations With Infinitely Many Solutions or No Solution
17. ANS:
no solution
PTS: 1 TOP: 4-2 Example 3 Systems With Infinitely Many Solutions or No Solution
18. ANS:
$(8,32)$
PTS: 1 TOP: 4-2 Example 1 Solve Systems of Equations Using Substitution
19. ANS:
$(-5,4)$
PTS: 1
TOP: 4-3 Example 2 Understand Equivalent Systems of Equations
20. ANS:


PTS: 1 TOP: 4-4 Example 1 Understand an Inequality in Two Variables
21. ANS:


PTS: 1
TOP: 4-4 Example 2 Rewrite an Inequality to Graph It
22. ANS:


PTS: 1 TOP: 4-4 Example 4 Inequalities in One Variable in the Coordinate Plane
23. ANS:


PTS: 1 TOP: 4-5 Example 1 Graph a System of Inequalities
24. ANS:
$\$ 1.20$ per egg; $\$ .60$ for toast
PTS: 1
TOP: 4-1 Example 3 Write a System of Equations

