# TEST NAME: Systems BANK 

TEST ID: 47594
GRADE: 08
SUBJECT: Mathematics
TEST CATEGORY: My Classroom (Individual Teacher Assessments)

Student:
Class:
Date:

1. At what point do the lines represented by the equations $y=3 x+1$ and $y=-2 x-8$ intersect?
A. $(1,-8)$
B. $(-7,-20)$
C. $(2,-3)$
D. $\left(\frac{9}{5},-\frac{22}{5}\right)$
2. What is the solution to the system of linear equations graphed below?

A. $x=-2 ; y=1$
B. $x=4 ; y=-2$
C. There are no solutions.
D. There are an infinite number of solutions.
3. At what point do the graphs of the equations $\mathbf{4 x + 3 y = - 2 5}$ and $7 x-3 y=-52$ intersect?
A. $(-7,1)$
B. $(-1,7)$
C. $(1,-7)$
D. $(7,-1)$
4. Sari had 3 times as much money as Raymond. If after she paid Raymond a certain number of dollars, she had $\$ 30$ and Raymond had $\$ 42$, which of these statements is correct?
A. Sari originally had $\$ 18$.
B. Sari originally had $\$ 24$.
C. Sari paid Raymond $\$ 18$
D. Sari paid Raymond $\$ 24$.
5. Joaquin just graduated from college. His transcript says he passed a total of 42 courses worth a total of 135 credits, and he knows that each course was worth either 3 credits or 4 credits. He wants to know the number of 3-credit and 4-credit courses he passed without individually counting them.

## Part I

Write a system of equations for this situation, with $x$ representing the number of 3-credit courses that Joaquin passed and $y$ representing the number of 4 -credit courses that he passed.

Part II
Solve the system of equations with the elimination method. That is, multiply both sides of one of the equations by a constant, and then add or subtract the equations to eliminate one of the variables. Show your work.

## Part III

Solve the system of equations with the substitution method. That is, solve for one of the variables in one of the equations, and then substitute the result into the other equation. Again, show your work. Did you get the same result as in Part II? How many 3-credit and 4-credit courses did Joaquin pass?
6. Nina graduated from college with 138 credits after passing $\mathbf{4 0}$ courses. If each of the courses she passed was worth 3 credits or 4 credits, which of these statements is correct?
A. 22 of the courses Nina passed were worth 3 credits each.
B. 22 of the courses Nina passed were worth 4 credits each.
C. Nina earned a total of 54 credits from 3 -credit courses.
D. Nina earned a total of 54 credits from 4 -credit courses.
7. Find the value of $x$ in the following system of equations:
$2 x-3 y=9$
$x=4+y$
A. $x=-1$
B. $x=1$
C. $x=2$
D. $x=3$
8. Which of these systems of equations has no solution? Select three that apply.
A. $5 x+9 y=34$
$5 x+9 y=27$
B. $7 x-15 y=26$
$8 x-15 y=26$
C. $11 x-2 y=-25$
$11 x-2 y=-20$
D. $14 x+7 y=30$
$14 x+7 y=40$
E. $\quad 17 x-10 y=38$ $17 x-12 y=38$
F. $\quad 18 x+5 y=-42$
$19 x+6 y=-44$
9. A bride and groom both invited guests to their wedding. The bride invited twice as many women as the groom did, and the groom invited twice as many men as the bride did. If the bride invited 135 guests and the groom invited 105 guests, which of these is the number of men or the number of women that either the bride or groom invited? Select three that apply.
A. 25
B. 50
C. 100
D. 105
E. 110
F. 135
10. The lines $2 x-y=8$ and $4 x-2 y=16$ intersect at $\qquad$ .
A. 2 points
B. 1 point
C. an infinite number of points
D. There are no intersection points.
11. Point $A$ is a solution to the system of equations $y=-6 x+2$ and $y=5 x+7$, Point $B$ is a solution to the system of equations $y=5 x+7$ and $y=9 x-1$, and Point $C$ is a solution to the system of equations $y=9 x-1$ and $y=-4 x+8$. Where do the graphs of the equations $y=5 x+7$ and $y=9 x-1$ intersect?
A. at Point $A$
B. at Point $B$
C. at Point $C$
D. They do not intersect.
12. Which of these systems of equations has a solution of $(6,-7)$ ?

A $x-2 y=20$
$2 x-y=19$
B. $x-2 y=20$
$2 x+y=19$
C. $x+2 y=20$
$2 x-y=19$
D. $x+2 y=20$
$2 x+y=19$
13. Does the line passing through the points $(-1,-5)$ and $(2,1)$ intersect the line passing through the points $(-1,-6)$ and $(1,2)$ ?
A No, because the slopes of the lines are the same, but the $y$-intercepts are different.
B. No, because the slopes of the lines are different.
C. Yes, because the slopes of the lines are the same, but the $y$-intercepts are different.
D. Yes, because the slopes of the lines are different.
14. Suppose the first equation in a system of two linear equations is $12 x+7 y=25$. The second equation being which of these will cause the system to have no solution?
A. $12 x+7 y=20$
B. $12 x+7 y=25$
C. $12 x+9 y=20$
D. $12 x+9 y=25$
15. Yuka earns frequent flyer miles from 2 airlines. In 2011, she flew $\mathbf{2 0 , 0 0 0}$ miles with Airline $A$ and 10,000 miles with airline $B$, and the combined value of her miles was $\$ 700$. In 2012, she flew $\mathbf{1 0 , 0 0 0}$ miles with Airline A and 20,000 with Airline B, and the combined value of her miles was $\$ 800$. Which of these is a correct statement?
A. Airline A's miles are worth $\$ 0.02$ each, which is less than Airline B's miles are worth.
B. Airline A's miles are worth $\$ 0.02$ each, which is more than Airline B's miles are worth.
C. Airline A's miles are worth $\$ 0.03$ each, which is less than Airline B's miles are worth.
D. Airline A's miles are worth $\$ 0.03$ each, which is more than Airline B's miles are worth.
16. If $3 x-9 y=21$ and $6 x+3 y=21$, which of these could be a value of $x$ or $y$ ? Select two that apply.
A. -5
B. -2
C. -1
D. 4
E. 5
F. 9
17. At what point does a line with a slope of $\frac{3}{4}$ and a $y$-intercept of -5 intersect a line with a slope of $-\frac{1}{4}$ and a $y$-intercept of $3 ?$
A. $(-8,1)$
B. $(-1,8)$
C. $(1,8)$
D. $(8,1)$
18. Kirk and Nate are members of the same basketball team. So far this season, the team has played two games. In the first game, Nate scored 5 times as many points as Kirk, and in the second game, Kirk scored 3 times as many points as Nate. If Kirk and Nate have both scored a total of 42 points, which of these is a number of points that either Kirk or Nate has scored in a game this season? Select three that apply.
A. 12
B. 18
C. 30
D. 36
E. 42
19. Find the point of intersection of the lines:
$y=4 x+1$ and $y=-2 x+4$
A $(2,9)$
B. $\left(\frac{1}{2}, 3\right)$
C. $(1,2)$
D. $\left(\frac{1}{4}, 2\right)$
20. A system of two linear equations is shown below.
$5 x+2 y=-4$
$5 x+2 y=1$
Which statement is true regarding the solution to this system of linear equations?
A. The system has no solution.
B. The system has one unique solution at $(5,2)$.
C. The system has one unique solution at $(-4,1)$.
D. The system has an infinite number of solutions.
21. The sum of the ages of David and Marta is $\mathbf{6 0}$ years, and the difference is $\mathbf{1 6}$ years. If David is older than Marta, which of these statements is correct?
A. David is 38 years old.
B. Marta is 38 years old.
C. David is 44 years old.
D. Marta is 44 years old.
22. What is the solution to the system of linear equations graphed below?

A. $x=-1 ; y=4$
B. $x=0 ; y=2$
C. $x=2 ; y=0$
D. $x=4 ; y=-1$
23. The system of equations $x+2 y=6$ and $x-4 y=0$ is graphed below. What is the solution to the system of equations?


A $(0,6)$
B. $(1,4)$
C. $(4,1)$
D. $(6,0)$
24. Which of these is a solution to the system of equations $3 x-y=15$ and $6 x-2 y=30$ ? Select all that apply.
A $(6,3)$
B. $(7,6)$
C. $(8,9)$
25. The graphs of which of these pairs of linear equations intersect at the point (-3,2)? Select three that apply.
A. $6 x-y=15$
$-3 x+4 y=-18$
B. $2 x+y=-4$
$3 x+2 y=-5$
C. $x+8 y=19$
$4 x-5 y=2$
D. $8 x+y=22$
$-2 x-5 y=4$
E. $\quad 5 x-y=-17$
$x+4 y=5$
F. $-4 x+3 y=18$
$2 x-7 y=-20$
26. Why does the following system of linear equations have one solution?

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2x+11y=11
x+11y=0
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A because if you subtract the second equation from the first equation, you get $x=11$
B. because if you subtract the second equation from the first equation, you get $y=11$
C. because if you subtract the second equation from the first equation, you get $0=11$
D. because if you subtract the second equation from the first equation, you get $11=11$
27. At what point do the graphs of the equations $9 x-2 y=30$ and $x+2 y=10$ intersect?

A $(2,4)$
B. $(3,4)$
C. $(4,2)$
D. $(4,3)$
28. When attempting to solve the system of equations $-x-9 y=90$ and $x=y-10$, Sergey got a solution of $(-2,-8)$. Which of these statements is correct?
A. Sergey found the wrong value of $x$ and the wrong value of $y$.
B. Sergey found the wrong value of $x$, but the right value of $y$.
C. Sergey found the right value of $x$, but the wrong value of $y$.
D. Sergey found the right value of $x$ and the right value of $y$.
29. Olivia added the linear equations $-4 x+9 y=19$ and $5 x-9 y=-17$ together and got $x=2$. She then substituted the value of $x$ back into one of the equations and simplified to get $y=3$. How many solutions are there to the system of equations?
A 0
B. 1
C. 2
D. 3
30. Kenton and Lamar are brothers who had a bicycle race from their house to their school and back. Because he had to stop for a passing train, it took Lamar 3 times as long as Kenton to go from their house to their school. Because of a flat tire, it took Kenton 5 times as long as Lamar to go from their school back to their house. If Kenton's total time was 19 minutes and Lamar's total time was 15 minutes, how long did it take Kenton to go from their house to their school?
A. 3 minutes
B. 4 minutes
C. 12 minutes
D. 15 minutes
31. Which of the following equations defines a line that will intersect the graph of $\mathbf{6 x} \boldsymbol{- 2 y = 1 0}$ exactly once?
A $y=3 x-10$
B. $y=3 x-5$
C. $y=3 x-1$
D. $y=6 x-5$
32. Select the statement that correctly describes the solution to this system of equations.
$-3 x+2 y=-22$
$-5 y=-4 x+27$
A There is no solution.
B. There are infinitely many solutions.
C. There is exactly one solution at $(8,1)$.
D. There is exactly one solution at $(1,8)$.
33. Which of these systems of equations has an infinite number of solutions?
A. $-6 c+11 d=20$
$-6 c+11 d=20$
B. $-6 c+11 d=20$
$-5 c+8 d=22$
C. $-6 c+11 d=22$
$-5 c+8 d=22$
D. $-5 c+8 d=20$
$-5 c+8 d=22$
34. What is the solution to the system of equations $x-y=-1$ and $x-3 y=-13$ ?

A $(5,6)$
B. $(6,5)$
C. $(7,8)$
D. $(8,7)$
35. Which of these systems of linear equations has one solution?
A. $14 x+7 y=28$
$-14 x-7 y=-28$
B. $14 x+7 y=28$
$-14 x-7 y=28$
C. $14 x+7 y=28$
$14 x-7 y=-28$
D. $14 x+7 y=28$
$14 x+7 y=-28$
36. The intersection of the graphs of two linear equations can be located on a Cartesian grid by starting at the origin, moving 5 units to the left, and then moving 7 units down. Which of these is a solution to the system of equations?
A. $x=-y=-5$
B. $x=-7 ; y=5$
C. $x=-5 ; y=-7$
D. $x=5 ; y=7$
37. Select all the statements that correctly describe the solutions to this system of equations.
$2 x-y=0$
$x+y=9$
A. There is exactly one solution to the system of equations.
B. There is more than one solution to the system of equations.
C. The coordinates $(3,6)$ are the solution to the system of equations.
D. The coordinates $(6,3)$ are the solution to the system of equations.
E. The coordinates $(-3,-6)$ are the solution to the system of equations.
38. Alistair writes the system of equations below.

$$
\begin{aligned}
& 2 x+3 y=-60 \\
& 2 x+3 y=120
\end{aligned}
$$

## Which statement describes the solution to this system of equations?

A There is exactly one solution, $(2,3)$.
B. There is exactly one solution, $(-60,120)$.
C. There is no solution to the system of equations.
D. There are infinite number of solutions to the system of equations.
39. Kathleen successfully solved the system of equations $4 x+3 y=15$ and $-5 x-2 y=-24$ by multiplying each equation by a constant and adding the two equations together to eliminate the $x$-terms. She then solved for $y$ and substituted the value of $y$ back into one of the equations and solved for $x$. What could she have multiplied each equation by, and what was her final answer?
A. She could have multiplied the first equation by 4 and the second equation by 5 , getting a final answer of $x=$ -3 and $y=6$.
B. She could have multiplied the first equation by 5 and the second equation by 4 , getting a final answer of $x=$ -3 and $y=6$.
C. She could have multiplied the first equation by 4 and the second equation by 5 , getting a final answer of $x=$ 6 and $y=-3$.
D. She could have multiplied the first equation by 5 and the second equation by 4 , getting a final answer of $x=$ 6 and $y=-3$.
40. The graphs of the equations $y=2 x-5$ and $y=4 x-3$ intersect at point $A$, and the graphs of the equations $y=4 x-3$ and $y=8 x+1$ intersect at point $B$. Point $A$ must be a solution of which of these equations? Select two that apply.
A. $y=2 x-5$
B. $y=4 x-3$
C. $y=8 x+1$
41. A car can travel 25 miles per gallon on the highway and 20 miles per gallon in the city. The car's gas tank can hold 21 gallons. If the car traveled 500 miles on a full tank of gas, how many gallons were used for city driving?
A. 1 gallon
B. 5 gallons
C. 16 gallons
D. 20 gallons
42. The solution to a system of two linear equations is $x=3 ; y=9$. How could the intersection of the graphs of the two equations be located on a Cartesian grid?
A. From the origin, move 3 units to the left, and then move 9 units down.
B. From the origin, move 3 units to the left, and then move 9 units up.
C. From the origin, move 3 units to the right, and then move 9 units up.
D. From the origin, move 9 units to the right, and then move 3 units up.
43. Estimate the solution of the linear system graphically and check the solution algebraically:
$x+y=-1$
$3 x-y=5$
A $(-1,1)$

B. $(1,-2)$

C. $(2,1)$

D. $(0,-1)$

44. What is the solution to the system of equations $x-y=5$ and $3 x+7 y=-5$ ?
A. $(-4,1)$
B. $(-2,3)$
C. $(1,-4)$
D. $(3,-2)$
45. How many solutions does the system of equations $\mathbf{- 6 a + b = 1 4}$ and $-12 a+2 b=28$ have?

A no solutions
B. 1 solution
C. 2 solutions
D. an infinite number of solutions
46. Suppose the first equation in a system of two linear equations is $-4 x+13 y=-2$. The second equation being which of these will cause the system to have one solution?
A. $-26 x+8 y=-6$
B. $-8 x+26 y=-4$
C. $-4 x+13 y=-8$
D. $-4 x+13 y=-2$
47. A game show contestant is awarded $\$ 100$ for a correct answer and is penalized $\$ 50$ for an incorrect answer. So far he has answered 20 questions and has won $\$ 200$. How many questions has he answered correctly?
A. 2
B. 4
C. 8
D. 12
48. The line with a slope of $\frac{1}{3}$ and a $y$-intercept of -15 intersects the line passing through which of these pairs of points? Select three that apply.
A. $(12,-13)$ and $(15,-12)$
B. $(15,-20)$ and $(18,-21)$
C. $(18,-9)$ and $(24,-7)$
D. $(24,-11)$ and $(30,-10)$
E. $(30,-15)$ and $(36,-14)$
49. Hannah is at the supermarket to buy carrots and potatoes. If she buys 2 pounds of carrots and 3 pounds of potatoes, it will cost her a total of $\$ 8$, and if she buys 4 pounds of carrots and 4 pounds of potatoes, it will cost her a total of $\$ 13$. Which of these statements is correct?
A. Carrots cost $\$ 1.50$ a pound, which is less than potatoes cost.
B. Carrots cost $\$ 1.50$ a pound, which is more than potatoes cost.
C. Carrots cost $\$ 1.75$ a pound, which is less than potatoes cost.
D. Carrots cost $\$ 1.75$ a pound, which is more than potatoes cost.
50. How many solutions does the system of equations $-8 x+y=11$ and $3 x+y=11$ have?
A. no solutions
B. 1 solution
C. 2 solutions
D. an infinite number of solutions
51. Which of these systems of equations has one solution? Select three that apply.
A. $2 x-7 y=-44$
$2 x-7 y=-88$
B. $6 x+8 y=65$
$6 x+9 y=65$
C. $8 x-2 y=41$
$16 x-4 y=82$
D. $9 x-3 y=-58$
$19 x-3 y=-58$
E. $\quad 23 x+13 y=66$
$23 x+13 y=66$
F. $25 x-12 y=71$
$27 x-14 y=73$
52. Suppose the first equation in a system of two linear equations is $3 x-5 y=18$. The second equation being which of these will cause the system to have an infinite number of solutions?
A. $3 x-5 y=14$
B. $3 x-5 y=18$
C. $3 x-7 y=14$
D. $3 x-7 y=18$
53. What is the solution to the system of equations $2 x+3 y=40$ and $y=x+10$ ?
A. $x=2 ; y=12$
B. $x=4 ; y=14$
C. $x=12 ; y=2$
D. $x=14 ; y=4$
54. Bill bowled 3 games at a bowling alley and rented shoes, spending a total of $\$ 9.00$. LeAnn bowled 5 games at the bowling alley and rented shoes, spending a total of $\$ 14.00$. How much does it cost to bowl a game?
A. $\$ 1.50$
B. $\$ 2.50$
C. $\$ 2.80$
D. $\$ 3.00$
55. Which of these systems of linear equations has an infinite number of solutions?
A. $5 x-2 y=10$
$10 x-4 y=12$
B. $5 x-2 y=10$
$12 x-4 y=20$
C. $5 x-2 y=10$
$10 x-4 y=20$
D. $5 x-2 y=10$
$12 x-4 y=10$
56. The system of equations $4 x-y=2$ and $2 x-5 y=-26$ is graphed below. What is the solution to the system of equations?

A. $(-2,0)$
B. $(0,-2)$
C. $(2,6)$
D. $(6,2)$
57. Does the line passing through the points $(3,3)$ and $(7,11)$ intersect the line passing through the points $(5,8)$ and $(13,24) ?$
A No, because the slopes of the lines are the same, but the $y$-intercepts are different.
B. No, because the slopes of the lines are different.
C. Yes, because the slopes of the lines are the same, but the $y$-intercepts are different.
D. Yes, because the slopes of the lines are different.
58. Estimate the solution of the linear system graphically and check the solution algebraically:
$x+y=-4$
$y=3 x+16$
A. $(-5,1)$

B. $(10,-14)$

C. $(3,-7)$

D. $(4,-4)$

59. Solve the following system for $y$ :
$2 x-15 y=-10$
$-4 x+5 y=-30$
A. 2
B. 10
C. $2 x-40$
D. -2
60. Which of these systems of linear equations has no solution?
A. $y=3 x+8$
$y=3 x+16$
B. $y=3 x+16$
$y=6 x+16$
C. $y=3 x+8$
$y=6 x+16$
D. $y=3 x+8$
$y=8 x+16$
61. When Jeremy made 8 black and white copies and 2 color copies at a copy shop, the cost was $\$ 1.20$. When he made 10 black and white copies and 10 color copies, the cost was $\$ 3.00$. How much do black and white copies cost?
A. $\$ 0.10$
B. $\$ 0.15$
C. $\$ 0.20$
D. $\$ 0.30$
62. A change machine at an arcade gives change for $\$ 1$ bills and $\$ 5$ bills. If during a particular day, 200 bills were inserted into the machine, and the total value of the bills was $\$ 300$, how many $\$ 1$ bills were inserted into the machine?

A 25
B. 75
C. 125
D. 175
63. The graph below will allow you to determine the solution to which of these systems of linear equations?

A. $-2 x+y=-2$
$-x+y=-4$
B. $-2 x+y=2$
$-x+y=4$
C. $2 x+y=-2$
$x+y=-4$
D. $2 x+y=2$
$x+y=4$
64. Tamara and Jason work at a widget factory. Tamara arrived at work before Jason and began making widgets. Tamara had already made 20 widgets when Jason began his work. Tamara was producing widgets at a rate of 8 widgets per hour. Jason was able to produce widgets at a rate of 12 widgets per hour. At some point, Tamara and Jason will have produced the same number of widgets.

Part A:
Write a system of equations to represent the situation. Let $x=$ hours and $y=$ widgets.

## Part B:

How much time does it take for Tamara and Jason to produce the same number of widgets?
Part C:
How many widgets will Tamara and Jason have produced?
65. $3 x+2 y=8$
$5 x+2 y=12$
What is the solution of the system of equations shown above?
A. $(-2,7)$
B. $(2,1)$
C. $\left(\frac{4}{3}, 2\right)$
D. $(2,4)$
66. How many solutions does the system of equations $5 x-4 y=8$ and $5 x-4 y=2$ have?

A no solutions
B. 1 solution
C. 2 solutions
D. an infinite number of solutions
67. Vince successfully solved the system of equations $\mathbf{- 5 x + y = - 2 1}$ and $y=x-1$. Which of these statements could correctly describe what he did?
A. He substituted $x-1$ for $y$ in the equation $-5 x+y=-21$ and solved for $x$. He then substituted the value of $x$ back into one of the equations and solved for $y$, getting $x=4$ and $y=5$.
B. He substituted $x-1$ for $y$ in the equation $-5 x+y=-21$ and solved for $x$. He then substituted the value of $x$ back into one of the equations and solved for $y$, getting $x=5$ and $y=4$.
C. He substituted $x-1$ for $y$ in the equation $-5 x+y=-21$ and solved for $y$. He then substituted the value of $y$ back into one of the equations and solved for $x$, getting $x=4$ and $y=5$.
D. He substituted $x-1$ for $y$ in the equation $-5 x+y=-21$ and solved for $y$. He then substituted the value of $y$ back into one of the equations and solved for $x$, getting $x=5$ and $y=4$.
68. On a test consisting of only true/false questions and multiple-choice questions, true/false questions are worth 2 points each and multiple-choice questions are worth 6 points each. If the test contains 20 questions and is worth a total of 100 points, which of these is a correct statement?

A The test contains 10 multiple-choice questions.
B. The test contains 15 multiple-choice questions.
C. The test contains 10 true/false questions
D. The test contains 15 true/false questions
69. Which of these systems of equations has no solution?
A. $3 a-5 b=12$
$4 a-9 b=14$
B. $3 a-5 b=14$
$4 a-9 b=14$
C. $4 a-9 b=12$
$4 a-9 b=12$
D. $4 a-9 b=12$
$4 a-9 b=14$
70. Sindhu successfully solved the system of equations $3 x+y=9$ and $-2 x-y=-7$. Which of these statements could correctly describe what she did?
A. She added the two equations together to solve for $x$, and then she substituted the value of $x$ back into one of the equations and solved for $y$, getting $x=2$ and $y=3$.
B. She added the two equations together to solve for $x$, and then she substituted the value of $x$ back into one of the equations and solved for $y$, getting $x=3$ and $y=2$.
C. She added the two equations together to solve for $y$, and then she substituted the value of $y$ back into one of the equations and solved for $x$, getting $x=2$ and $y=3$.
D. She added the two equations together to solve for $y$, and then she substituted the value of $y$ back into one of the equations and solved for $x$, getting $x=3$ and $y=2$.
71. Ron used a combination of $45-$ cent stamps and $1-$ cent stamps to mail a package. He used 15 stamps in all. If the total cost for postage was $\$ 4.55$, how many 1 -cent stamps did he use?
A. 3
B. 5
C. 10
D. 12
72. Two families are saving up for a summer trip. The Smith family originally has $\$ 1000$ and will save $\$ 50$ every week. The Jones family originally has $\$ 500$ and will save $\$ 75$ every week.

After how many weeks will the two families have saved up the same amount of money?
A. 4
B. 12
C. 20
D. 60
73. The graph of linear equation $A$ passes through the points $(-7,4)$ and $(3,-10)$, while the graph of linear equation $B$ passes through the points $(-7,4)$ and $(5,11)$. Which of these is a solution to the system of equations consisting of linear equation $A$ and linear equation $B$ ?
A. $(-7,4)$
B. $(3,-10)$
C. $(5,11)$
D. $(7,4)$
74. In basketball, a field goal is worth 2 points or 3 points, depending on how far from the basket the shot is taken. Suppose a basketball player has made 6 field goals which have resulted in 14 points. How many 3-point field goals has the player made?
A. 2
B. 4
C. 6
D. 8
75. Nolan has 4 times as many pens as Fiona, and Fiona has 6 times as many pencils as Nolan. If Nolan has a total of 23 pens and pencils, and so does Fiona, which of these is a number of pens or a number of pencils that either Nolan or Fiona has? Select three that apply.
A 3
B. 5
C. 12
D. 20
E. 23
F. 30
76. Two rowing teams are having a race. Boat A had a head start, crossing the start line first and traveling at a speed of 3 meters per second. Boat $B$ waited and then crossed the start line 6 seconds after Boat $A$. The speed of Boat $B$ was 4.8 meters per second.

Part A:
Write two equations, one for Boat $A$ and one for Boat $B$. In both equations, let $t$ equal the time in seconds since Boat $A$ crossed the start line and $d$ equal the distance traveled in meters.

## Part B:

Solve the system of equations from Part A. Show your work.
Part C:
Determine the possible values of $t$ for each of the equations from Part A and give a reason for your answers. Then explain what the solution to the system of equations from Part B represents in the context of the problem.
77. 2 cups of low fat yogurt and 3 bananas contain a total of 650 calories. 4 cups of low fat yogurt and 2 bananas contain a total of 900 calories. How many calories does a cup of low fat yogurt contain?
A. 100
B. 175
C. 225
D. 325
78. A miniature golf course charges different prices for adults and children. On Saturday, $\mathbf{5 0}$ adults and 50 children played, and the golf course took in $\$ 800$. On Sunday, 65 adults and 75 children played, and the golf course took in $\$ 1100$. How much does the golf course charge for adults?
A. $\$ 6$
B. $\$ 8$
C. $\$ 10$
D. $\$ 16$
79. What is the solution to the system of equations shown in the graph?

A. $(-5,2)$
B. $(2,-5)$
C. No solution
D. All real numbers
80. The line passing through the points $(-2,12)$ and $(3,-23)$ intersects the line passing through which of these pairs of points? Select three that apply.
A. $(-6,14)$ and $(4,-16)$
B. $(-5,32)$ and $(3,-24)$
C. $(-4,17)$ and $(5,-28)$
D. $(-3,19)$ and $(6,-44)$
E. $(-2,16)$ and $(2,-20)$
81. Why does the following system of linear equations have an infinite number of solutions?
$9 x-15 y=-3$
$3 x-5 y=-1$
A. because if you subtract the second equation from the first equation, you get $0=-2$
B. because if you multiply both sides of the second equation by 3 and subtract the result from the first equation, you get $0=-2$
C. because if you subtract the second equation from the first equation, you get $0=0$
D. because if you multiply both sides of the second equation by 3 and subtract the result from the first equation, you get $0=0$

