

## Chapter 5 Test

### Multiple Choice

For each question, select the best answer.

- The point of intersection of a linear system  
**A** satisfies both equations  
**B** satisfies only one of the equations  
**C** is the  $x$ -intercept of one of the relations  
**D** is the  $y$ -intercept of one of the relations
- To solve a linear system by elimination,  
**A** one of the equations must be eliminated, or ignored  
**B** equations are added or subtracted to eliminate one variable  
**C** both equations must be graphed to find the point of intersection  
**D** one equation is solved for one variable, then that value is substituted into the other equation
- Different methods used to solve a linear system will result in  
**A** the same solution  
**B** different solutions  
**C** no solution  
**D** different points of intersection
- Solve each linear system by elimination.  
**a)**  $-9x + y = 21$   
 $8x - y = -19$   
**b)**  $6x - 5y = 2$   
 $-3x + y = -4$
- a)** Explain which method you would use to solve the linear system  
 $3x + 7y = -4$   
 $x - y = 2$   
**b)** What is the solution?
- Yogi is 6 years older than Michelle. The sum of their ages is 26. Write a system of linear equations to represent this information. What are their ages?
- Larry mixes cinnamon and sugar to make 100 g of a mix to sprinkle over French toast. Cinnamon costs 9¢/g and sugar costs 6.5¢/g. The spice mix costs 7¢/g. How much of each ingredient does Larry need to use?
- Aisha invests a total of \$3600 in two funds. One fund pays interest at 4.5% per year and the second fund pays interest at 6% per year. At the end of the year, Aisha has earned \$195 in interest. How much did Aisha invest in each fund?

### Short Response

- Solve each linear system by graphing.  
**a)**  $y = 3x + 7$   
 $y = -x + 3$   
**b)**  $y = 2x - 3$   
 $y = \frac{2}{3}x + 1$
- Solve each linear system by substitution.  
**a)**  $y = -2x + 6$   
 $4x + y = -2$   
**b)**  $-3x + y = 1$   
 $2x - 2y = -6$

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**BLM 5.CT.1**

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**Extended Response**

- 11.** The student council wants to hire a DJ for the end-of-year school dance. Rockin' Jimmy charges \$200 plus \$40/h. Patty and the HipHops charge \$230 plus \$35/h. Let  $y$  be the total cost for booking the DJ and  $x$  the number of hours the DJ plays at the party.
- a) Write an equation to represent the total cost to hire Rockin' Jimmy.
  - b) Write an equation to represent the total cost to hire Patty and the HipHops.
  - c) How many hours must be played for the costs to be the same for both DJs?
  - d) Who should the student council hire for the party? Explain why.
- 12.** Delilah is going to college in the fall. She needs to drive from one city to another. Within the city limits she drives at a speed of 50 km/h. Outside the city, she drives at a speed of 100 km/h. The trip to the campus is 200 km and takes 2.4 h.
- a) Let  $x$  represent the distance Delilah travels at 50 km/h. Let  $y$  be the distance she travels at 100 km/h. Write a system of linear equations to represent this situation.
  - b) How far does Delilah drive at each speed?
- 13.** A group of students are trying to raise money for a school trip. They are designing logos to put on T-shirts and caps. The printers charge \$80 printing fee plus \$5 for each T-shirt and \$2 for each cap.
- a) The students have a budget of \$460. They want to make a total of 100 T-shirts and caps. Write a system of linear equations to represent this information.
  - b) How many T-shirts and how many caps can they make?
  - c) The group sells the T-shirts for \$18 each and the caps for \$10 each. The T-shirts are a hit; twice as many T-shirts are selling than caps. What is the minimum number of T-shirts and caps that must be sold in order to break even?
  - d) How much profit will they make if they sell all of their T-shirts and caps?