#### Study Island

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Title: **Unit 7 Test Review Algebra 1B**

**1.** Which of the following number lines shows the solution to the inequality given below?

4*x* + 7 < -33  OR  4*x* + 4 > -16

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **A.** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | -20 | -18 | -16 | -14 | -12 | -10 | -8 | -6 | -4 | -2 | 0 | 2 | 4 | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **B.** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | -20 | -18 | -16 | -14 | -12 | -10 | -8 | -6 | -4 | -2 | 0 | 2 | 4 | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **C.** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | -20 | -18 | -16 | -14 | -12 | -10 | -8 | -6 | -4 | -2 | 0 | 2 | 4 | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **D.** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | -20 | -18 | -16 | -14 | -12 | -10 | -8 | -6 | -4 | -2 | 0 | 2 | 4 | | |

**2.** Solve for *x* in the two equations below using substitution.

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**3.** The freshman class is planning a field trip. The class can either visit the aviation museum or the local arboretum. At the aviation museum, tickets cost $18 each, plus a flat rate of $54 for parking all the buses. At the arboretum, tickets cost $12 each, plus a flat rate of $61 for parking all the buses.  
  
Let *x* represent the number of people going on the field trip, and let *y* represent the total cost of the field trip. Which system of equations could be used to find how many people can go on either field trip so that both field trips have the same cost?

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**4.** Solve for x.

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**5.** Use elimination to find the solution to the system of equations.

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**6.** Use elimination to find the solution to the system of equations.

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**7.** Solve for *y* in the two equations below using substitution.

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**8.** Solve for *x* in the two equations below using substitution.

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**9.** Which of the following number lines shows the solution to the inequality given below?

3*x* - 3 < -15  OR  4*x* - 8 > 8

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **A.** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | -10 | -8 | -6 | -4 | -2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **B.** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | -10 | -8 | -6 | -4 | -2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **C.** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | -10 | -8 | -6 | -4 | -2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **D.** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | -10 | -8 | -6 | -4 | -2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | | |

**10.** Use elimination to find the solution to the system of equations.

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**11.** The following system of equations is graphed below.

|  |  |  |
| --- | --- | --- |
| 3*x* - 2*y* | = | -9 |
| 2*x* + 2*y* | = | 4 |

Find the solution to the system.

|  |  |  |
| --- | --- | --- |
|  | **A.** | *x* = -1, *y* = 3 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | *x* = 1, *y* = 3 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | *x* = -1, *y* = -3 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | *x* = 1, *y* = -3 |

**12.** Solve for x.

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**13.** Solve for *y* in the two equations below using substitution.

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**14.** The following system of equations is graphed below.

|  |  |  |
| --- | --- | --- |
| -2*x* - 3*y* | = | 6 |
| -2*x* + 4*y* | = | -22 |

Find the solution to the system.

|  |  |  |
| --- | --- | --- |
|  | **A.** | *x* = 4, *y* = -4 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | *x* = 3, *y* = -4 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | *x* = -4, *y* = 3 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | *x* = 3, *y* = -3 |

**15.** Henry takes guitar and piano lessons. Last month, he went to 4 guitar lessons and 4 piano lessons for a total cost of $200. This month Henry went to 4 guitar lessons and 2 piano lessons for a total cost of $150.

The following system of equations can be used to determine the cost of each type of lesson.

4x + 4y = 200

4x + 2y = 150

The cost of each guitar lesson is represented by x. The cost of each piano lesson is represented by y. How much is a guitar lesson?

**16.** The following system of equations is graphed below.

|  |  |  |
| --- | --- | --- |
| 4*x* - 3*y* | = | -2 |
| 3*x* + 5*y* | = | 13 |

Find the solution to the system.

|  |  |  |
| --- | --- | --- |
|  | **A.** | *x* = -1, *y* = 2 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | *x* = 1, *y* = 2 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | *x* = 1, *y* = -2 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | *x* = -1, *y* = -2 |

**17.** Solve for *y* in the two equations below using substitution.

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**18.** Use elimination to find the solution to the system of equations.

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**19.** The following system of equations is graphed below.

|  |  |  |
| --- | --- | --- |
| -5*x* - 4*y* | = | 7 |
| -2*x* + 2*y* | = | 10 |

Find the solution to the system.

|  |  |  |
| --- | --- | --- |
|  | **A.** | *x* = 2, *y* = -3 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | *x* = -2, *y* = 2 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | *x* = -3, *y* = 3 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | *x* = -3, *y* = 2 |

**20.** Rick and Casey are buying fish at the local market for their restaurants. Rick buys 3 brook trout for *x* dollars each and 3 rainbow trout for *y* dollars each and pays $90 for the fish. Casey buys 4 brook trout for *x* dollars each and 5 rainbow trout for *y* dollars each and pays $130 for the fish. The system of equations shown below represents this situation.

3x + 3y = 90

4x + 5y = 130

Which statement is true?

**A.**

Casey paid $15 for each rainbow trout.

**B.**

Rick spent more money on rainbow trout than he did on brook trout.

**C.**

Casey spent 3 times as much on brook trout than he did on rainbow trout.

**D.**

A brook trout costs $10 more than a rainbow trout.

**21.** Which of the following number lines shows the solution to the compound inequality given below?

-17 < 4*x* + 3 < 35

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **A.** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | -10 | -8 | -6 | -4 | -2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **B.** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | -10 | -8 | -6 | -4 | -2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **C.** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | -10 | -8 | -6 | -4 | -2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **D.** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | -10 | -8 | -6 | -4 | -2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | | |

**22.** Use elimination to find the solution to the system of equations.

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**23.** Chloe is planning an event and purchasing floral arrangements. At Petals Plus, the arrangements cost $32.64 each, and the store charges $52.00 for delivery of the flowers to the event site. At Blooms, the arrangements cost $27.69 each, and the store charges $101.00 for delivery of the flowers to the event site.  
  
How many arrangements should she purchase from Blooms in order to get a better value?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 10 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 9 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 1 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 8 |

# Answers

1. C   
2. B   
3. A   
4. D   
5. C   
6. D   
7. C   
8. D   
9. B   
10. B   
11. A   
12. A   
13. C   
14. B   
15. X = 25 y = 25   
16. B   
17. C   
18. B   
19. D   
20. D   
21. A   
22. A   
23. A