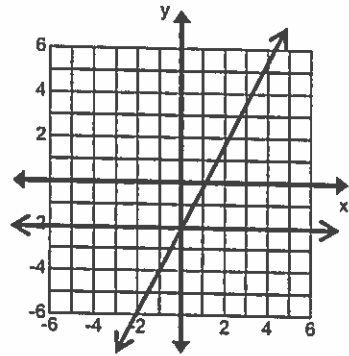# Study Guide 8th Grade
Unit 7 Troup County Schools

1. The solution to a set of linear equations is graphed. Write the two linear equations shown.
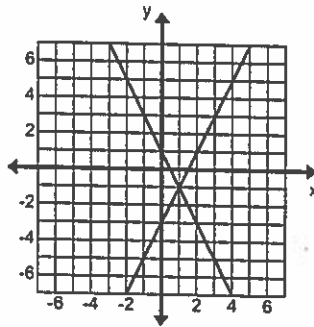
CC.8.EE.8a

2. What point is the solution?

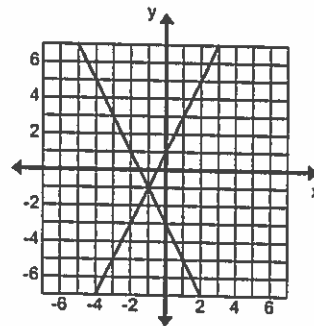3. *Match 2 equations to each graph.*

$y = -2x - 3$ *A or B ?*

$y = 2x - 3$ *A or B ?*

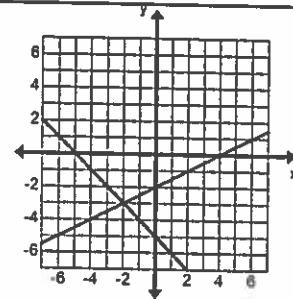$y = -2x + 1$ *A or B ?*

$y = 2x + 1$ *A or B ?*

Graph A

Graph B

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4. What is the solution to this system of equations?

(,)

CC.8.EE.1

5. Write the 2 linear equations from the graph.

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6. Solve the following system of equations: $x + 3y = 10$
   $2x + 2y = 12$

(,) CC.8.EE.1

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7. Carrie sells tickets to hockey games and lacrosse games. One day she sold 4 hockey tickets and 1 lacrosse tickets for $90. Another day she sold 2 hockey tickets and 3 lacrosse tickets for $70.
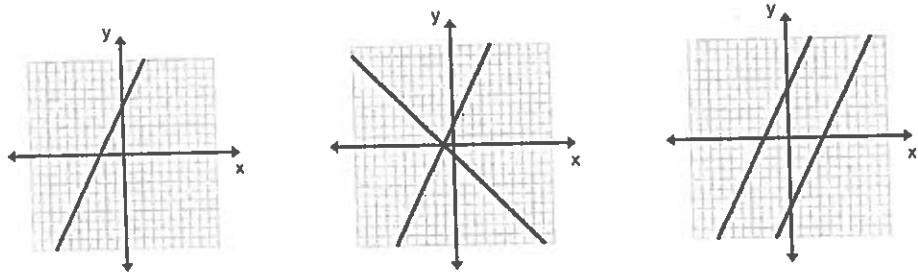
CC.8.EE.2

How much does a hockey ticket cost?

How much does a lacrosse ticket cost?

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8. What would be the result of the first step of using the substitution method on these equations?
   $y = 2x - 9$ *and* $x + y = 14$

CC.8.EE.2

9. Match boxes with graphs: | No solution | | Infinite solutions | | One solution |

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10. Match the description of a graph to how many solutions it has.

2 intersecting lines graphed   one solution

2 lines graphed on top of each other (looks like 1 line)   no solution

pair of parallel lines graphed   infinite solutions

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11. Jana and Quinn sold hand-knitted scarves at the craft fair. Jana earned j dollars selling her scarves. Quinn earned $10 less than 3 times what Jana earned. Jana and Quinn earned a total of $190 at the fair. Which pair of equations could be used to find j, the amount Jana earned and q, the amount Quinn earned at the craft fair?
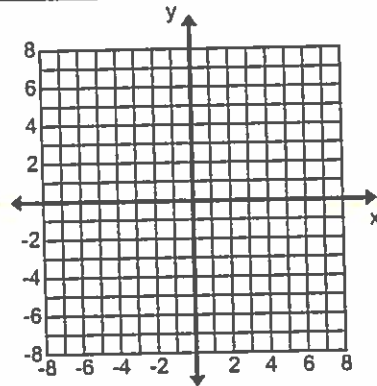
CC.8.EE.2

$$j + q = 190$$
$$q = 3j - 10$$

$$j + q = 190$$
$$q = 10 - 3j$$

$$j - q = 190$$
$$q = 3j + 10$$

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12. Demonstrate that you recognize the graph of the system of the equations by graphing:

$$y = 2x + 2 \quad \text{and} \quad y = -x - 1$$

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13. In which week will the 2 plants be the same height?

CC.8.EE.b

A. Week 1
B. Week 2
C. Week 3
D. Week 4

Bean Plant		
Week	Height	
0	2	(0,2)
1	4	(1,4)
2	6	(2,6)
3	8	(3,8)
4	10	(4,10)

Okra Plant		
Week	Height	
0	6	(0,6)
1	7	(1,7)
2	8	(2,8)
3	9	(3,9)
4	10	(4,10)

14. What would be the result of the SECOND STEP of using the substitution method on these equations?

$$3x - 6y = 10 \quad and \quad y = x - 2$$

CC.8.EE.b

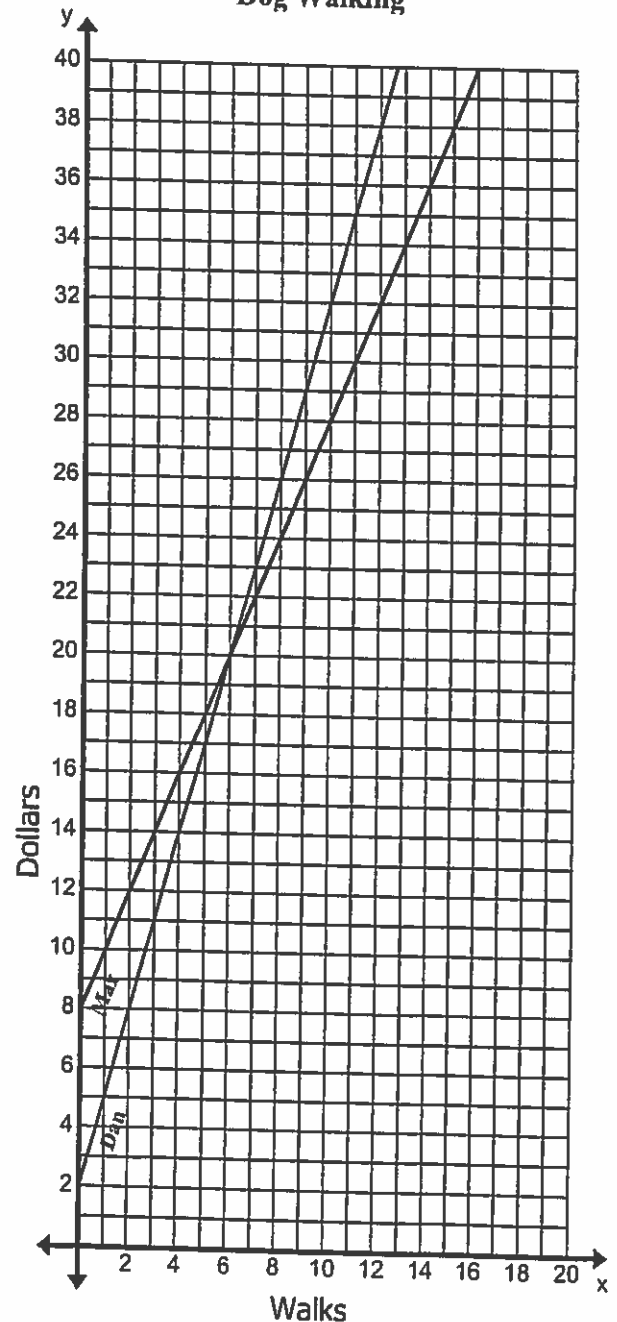STEP ONE: $3x - 6(x - 2) = 10$

STEP TWO:

_____

Use this graph and information to answer questions 15 & 16.
Two dog walker's prices are graphed to the right.
Max charges $8 to get to know a new dog and $2.00 per walk.
Dan charges $2 to get to know a new dog, plus $3.00 per walk after that.

15. What is the charge for each to walk a dog 3 times?

    A. Max charges $11 and Dan charges $14.
    B. Max charges $14 and Dan charges $11.
    C. Max charges $14 and Dan charges $16.
    D. Max charges $16 and Dan charges $14.

16. Choose the statement below that describes the best deal for choosing dog walkers.

    A. For fewer than 6 walks, Dan has the best price, but for more than 6 walks, Max has the best price.
    B. For fewer than 6 walks, Max has the best price, but for more than 6 walks, Dan has the best price.
    C. For fewer than 20 walks, Max has the best price, but for more than 20 walks, Dan has the best price.
    D. For fewer than 20 walks, Dan has the best price, but for more than 20 walks, Max has the best price.

17. Explain what the point (10, 28) means.

    A. Dan walked a dog 28 times for $10.

    B. Max walked a dog 28 times for $10.

    C. Max walked a dog 10 times for $28.

    D. Dan walked a dog 10 times for $28.

Dog Walking

18. $y = x - 1$
    $y = -2x + 5$

19. $12m + 3n = 0$
    $-5m - 3n = -7$

20. $y = 3x$
    $x + 2y = 21$

21. $2x - y = 8$
    $x - 8y = 4$

22. Scottie has $4.60 in quarters and nickels. Altogether he has 28 coins. Write a system of equations that describes the change Scottie has. Solve the system of equations and be sure to show your work. How many of each coin does Scottie have?

23. Movie Gallery charges $19.99 per year for a membership in its DVD club. Members can rent DVDs for $1 per night. Nonmembers can rent DVDs for $2 per night. Write a system of equations that describes the cost of renting DVDs. Solve the system of equations and be sure to show your work. What is the least number of DVDs that a member must rent in a year to make the membership cost effective?

Write each in slope intercept form (y=mx+b).

24. $\{-2x - y = 6$

25. $\{4x - 4y = 20$