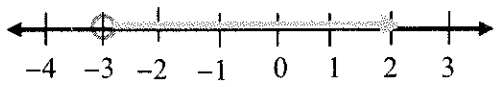
Lesson 2-A ~ Linear Inequalities

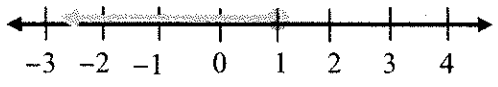
Name_____ Period_____ Date_____

Write the inequality for each graph shown. Use x as the variable.

1.



2.



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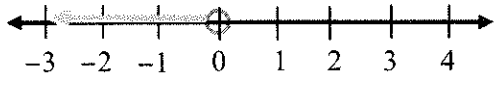
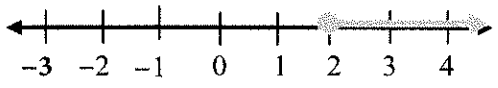


4.



Solve each inequality below. Graph the solution on a number line.

5. $3x+1>7$

6. $\frac{x}{2}-1\le -3$

7. $-5x+4<9$

8. $14\le 2(x+3)$

9. $-4\le\frac{x}{-3}-2$

10. $3x+4<x+4$

11. A forklift has a maximum carrying capacity of 1,400 pounds.

a. Each box at the warehouse weighs 50 pounds. Write an inequality to show the number of boxes that the forklift can hold.

b. A 150-pound crate is used to hold the boxes on the forklift. What is the maximum number of boxes that the forklift can carry in the crate?

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Solve each inequality. Graph the solution on a number line.

5. $5x \geq -20$

6. $x + 7 < 6$

7. $10 < 3x + 1$

8. $2x + 7 > 15$

9. $\frac{x}{2} - 1 \geq -4$

10. $-3x - 4 < 5$

11. $5(x + 3) \leq 20$

12. $7 > \frac{x}{-4} + 6$

13. $9x < 2x - 35$

14. $-7 + 4x \geq 3 - 6x$

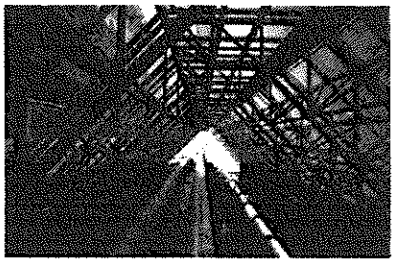
15. $2(x + 3) \geq 5x + 12$

16. $\frac{1}{2}x + 8 < x + 4$

17. A cargo elevator has a maximum carrying capacity of 240 pounds. Each cargo box weighs 20 pounds.

a. Write and solve an inequality that represents the maximum number of cargo boxes that the elevator can hold.

b. A 140-pound person rides in the elevator with the cargo boxes. Write and solve an inequality that represents the maximum number of cargo boxes the person can take with them in the elevator.



18. Frankie has $400 in her bank account at the beginning of the summer. She wants to have at least $150 in her account at the end of the summer. Each week she withdraws $22 for food and entertainment.

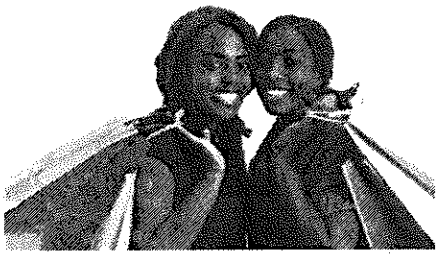
a. Write an inequality for this situation. Let x represent the number of weeks she withdraws money from her account.

b. How many weeks can Frankie withdraw money from her account?

19. Ethan was at the beach. He wanted to spend $10 or less on a beach bike rental. The company he chose to rent from charged an initial fee of $4 and an additional $0.35 per mile he rode.

a. Write an inequality for this situation. Let x represent the number of miles ridden.

b. How many miles can Ethan ride without going over his spending limit? Round to the nearest whole mile.



20. Callie and BreShay went to the mall. They each spent the exact same amount during the day. Callie spent less than or equal to $45. BreShay spent more than $40. Create a number line that shows all the possible amounts that Callie or BreShay could have spent during the day.