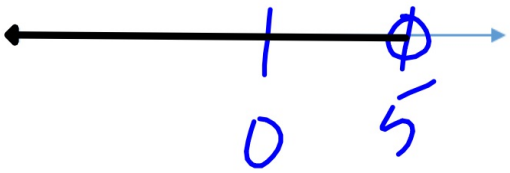
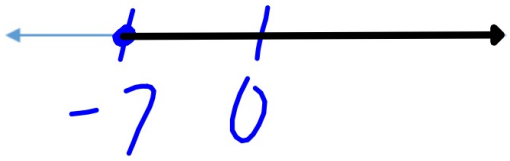
Graph each inequality.

1.) $G < 5$



2.) $-7 \leq w$ $w \geq -7$



Write an inequality for each statement.

3.) Michael needs at least 10 points to win the game.

$p \geq 10$

4.) The minimum height to get into the ride is 48 inches.

$x \geq 48$

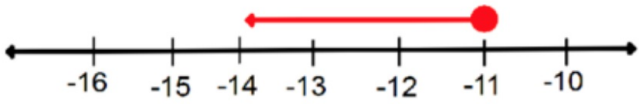
5.) The van can hold no more than 8 passengers.

$p \leq 8$

6.) Amani can invite up to 30 people to her birthday party.

$p \leq 30$

7.) Write an inequality for the following graph.



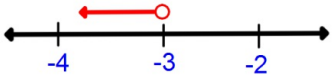
$x \leq -11$

HW #22 Answers:

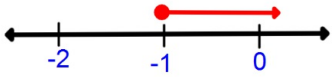
9. a. No b. No c. Yes

10. a. Yes b. No c. Yes

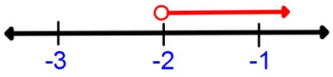
20.



22.



23.



31. $x \geq 4.5$ 32. $Q < -0.5$ 33. $s \leq 48$

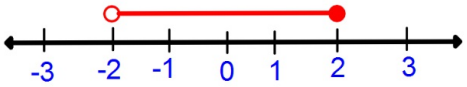
34. $a \geq 16$ 35. $w \leq 60$ 37. $a > 75$

38. N is less than 5

40. x is greater than or equal to 7

51.

72.



51. Error Analysis A student claims that the inequality $3x + 1 > 0$ is always true because multiplying a number by three and then adding one to it makes the number greater than zero. Use a counterexample to show why the student is not correct.

Is each number a s

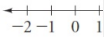
9. $3x - 7 > -1$

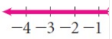
10. $4n - 3 \leq 5$

Graph each inequ

19. $x > 1$

23. $-2 < d$

31. 

32. 

33. A bus can seat

34. In many states,

35. It is not safe to

Write each inequ

38. $n < 5$

37. Aviation The appearances

Graph on a nun

72. all values of

Hwk #23 Answers

1.	a. yes	b. no	c. yes	8.	$x \geq -5$	9.	$x \leq -5$
2.	a. no	b. yes	c. yes	10.	$x < 3$	11.	$x \geq -8$
3.	a. no	b. yes	c. no	12 – 17: graphing			
4.	a. ~~no~~ yes	b. yes	c. yes	18.	$t \leq 38$	19.	$w \leq 2000$
5.	a. no	b. yes	c. yes	20.	$s \geq 20$	21.	$p \leq 250$
6.	a. no	b. yes	c. no	22.	$s \leq 55$	24.	$c \geq 9$

25. C

26. D

27. B

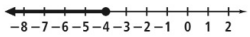
28. A

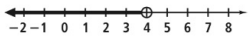
Determine whether each number is a solution of the given inequality.

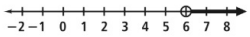
1. $x \leq -8$	**a.** -10 yes	**b.** 6 NO	**c.** -8
2. $-1 > x$ $x<-1$	**a.** 0 NO	**b.** -3 yes	**c.** -6 yes
3. $w < \frac{18}{7}$	**a.** 5	**b.** -2	**c.** $3\frac{1}{2}$
4. $0.65 \geq y$	**a.** 0.43	**b.** -0.65	**c.** 0.56
5. $2y + 1 > -5$	**a.** -4	**b.** -2	**c.** 4
6. $7x - 14 \leq 6x - 16$	**a.** 0	**b.** -4	**c.** 2
7. $n(n - 6) \geq -4$	**a.** 3	**b.** -2	**c.** 5

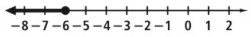
Match the inequality with its graph.

25. $6 < x$ **26.** $-6 \geq x$ **27.** $4 > x$ **28.** $x \leq -4$

A. 

B. 

C. 

D. 

Graph each inequality.

12. $x > 6$ **13.** $y \leq -10$ **14.** $8 \geq b$

15. $-4 < w$ **16.** $x < -7$ **17.** $x \geq 12$

Define a variable and write an inequality to model each situation.

18. The temperature in a refrigerated truck must be kept at or below 38°F.

19. The maximum weight on an elevator is 2000 pounds.

20. A least 20 students were sick with the flu.

21. The maximum occupancy in an auditorium is 250 people.

22. The maximum speed on the highway is 55 mi/h.

23. A student must have at least 450 out of 500 points to earn an A.

24. The circumference of an official major league baseball is at least 9.00 inches.

Graph each inequality.

12. $x > 6$ **13.** $y \leq -10$ **14.** $8 \geq b$

15. $-4 < w$ **16.** $x < -7$ **17.** $x \geq 12$

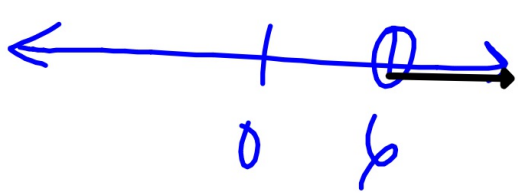
1.) Solve and graph the solution:

$4 + 3x - 7 > 15$ Check your answer.

$3x - 3 > 15$

$3x > 18$

$x > 6$



2.) Solve and graph the solution:

$7 - 2x > 23$ Check your answer.

$-2x < 16$

$x > -8$

Pick two numbers and place them in the spaces to make a true statement.

$8 < 15$

Add 3 to both sides. Place the proper inequality inbetween.

$11 < 18$

Pick two numbers and place them in the spaces to make a true statement.

$20 > 7$

Subtract 5 from both sides. Place the proper inequality inbetween.

$15 > 2$

Pick two numbers and place them in the spaces to make a true statement.

3 < 18

Multiply both sides by 10. Place the proper inequality inbetween.

30 < 180

Pick two numbers and place them in the spaces to make a true statement.

10 < 20

Divide both sides by 2. Place the proper inequality inbetween.

5 < 10

Pick two numbers and place them in the spaces to make a true statement.

30 > 5

Multipy both sides by -2. Place the proper inequality inbetween.

-60 < -10

Pick two numbers and place them in the spaces to make a true statement.

20 < 50

Divide both sides by -1. Place the proper inequality inbetween.

-20 > -50

The following steps DON'T affect the direction of the inequality:

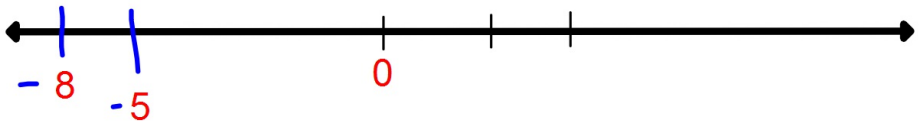
- Adding the same number to both sides
- Subtracting the same number from both sides
- Multiplying both sides by the same positive number
- Dividing both sides by the same positive number

The following steps **DO** affect the direction of the inequality:

- Multiplying both sides by the same negative number
- Dividing both sides by the same negative number

Why does multiplying and dividing each side of an inequality by a negative number make the Inequality Symbol FLIP?

$5 < 8$



When solving INEQUALITIES:

- Take all the same steps as if it were an EQUATION
- If you multiply or divide both sides by a NEGATIVE you must FLIP the inequality symbol.

1.) Solve this inequality.

$x + 6 - 5x - 8 > 26$

$-4x - 2 > 26$

$-4x > 28$

$x < -7$

2.) Solve this inequality.

$9 - 5(2c + 8) + 3c \leq 70$

$9 - 10c - 40 + 3c \leq 70$

$-7c - 31 \leq 70$

$-7c \leq 101$

$c \geq \frac{101}{-7}$

3.) Solve this inequality.

$48\left(\frac{5}{24}-\frac{11}{6}G\right)\geq\left(\frac{7}{16}\right)^{48}$

$10-88G\geq 21$

$-88G\geq 11$

$G\leq\frac{11}{-88}$

$G\leq\frac{1}{-8}$

4.) Solve this inequality.

$9+r-25\leq 5r$

$-r \quad -r$

$\frac{-16}{4}\leq\frac{4r}{4}$

$-4\leq r$

$r\geq -4$

5.) Solve this inequality.

$6w - 2(2w - 2) - 10 \leq 5w - 8 - 3w + 1$

$6w - 4w + 4 - 10 \leq 5w - 8 - 3w + 1$

$2w - 6 \leq 2w - 7$

$-6 \leq -7$ $\emptyset$

6.) Solve this inequality.

$9m + 21 - 12m + 3 < -6m + 24$

$-3m + 24 < -6m + 24$

$3m + 24 < 24$

$3m < 0$

$m < 0$

7.) Solve this inequality.

$7b + 3 - 5b + 10 > 11 + 2(b - 4)$

$2b + 13 > 11 + 2b - 8$

$2b + 13 > 3 + 2b$

$13 > 3$ R

8.) Solve this inequality.

$-4(2P - 5) > 32$

$-8P + 20 > 32$

$-8P > 12$

$P > \frac{-3}{2}$

You can now finish HW #24 - due Thursday!

Sec. 3-4

Pages 155-157

Problems 2, 3, 6, 13, 15, 27, 36, 67, 74

IXL #8 - K.3 & K.4 due Friday at 4pm!