




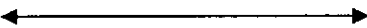



MATH 7 INEQUALITY UNIT STUDY GUIDE

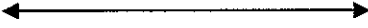
LESSON 10: Translate and Graph Inequalities

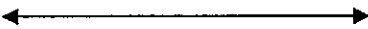
CIRCLE TYPE WHEN GRAPHING				
\neq	$>$	\geq	$<$	\leq
				

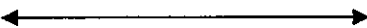
Graph the following inequalities on a number line.

1.) $t \neq 2$ 

2.) $-3 > s$ 

3.) $y \leq 1$ 

4.) $-23 < z$ 

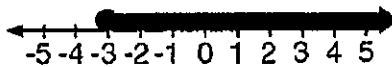
5.) $n \geq 3$ 

6.)
What inequality is represented by the graph below?



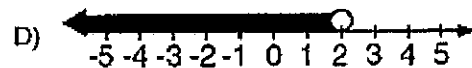
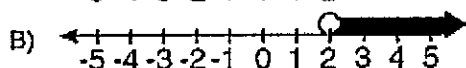
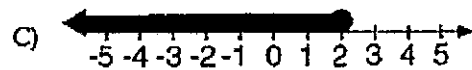
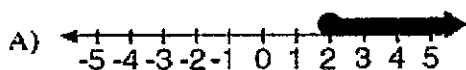
- A) $x > -1$ B) $x \leq -1$ C) $x < -1$ D) $x \geq -1$

7.)
What inequality is represented by the graph below?



- A) $x < -3$ B) $x > -3$ C) $x \geq -3$ D) $x \leq -3$

8.)
Which one of the following graphs represents the solution set of $x \geq 2$?



Translating Words to Symbols				
\neq All except	$>$ Greater than More than Older than	\geq At least Minimum	$<$ Less than Younger than	\leq No more than At most Limit Maximum Up to Greatest

Use the table below to answer the questions that follow.

AMUSEMENT PARK RIDES HEIGHT REQUIREMENTS			
<u>Ride</u>	<u>Height Requirement</u>	<u>Ride</u>	<u>Height Requirement</u>
Jungle Jam	minimum of 40 in.	The Spiral	more than 35 in.
Tilt-A-Whirl	at least 48 in.	Ladybug	under 46 in.
Stargazer	more than 44 in.	Leapin' Lizard	at least 38 in.
Bunny Hop	60 in. maximum	Racetrack	over 42 in.

9.) Write and graph an inequality that represents the height of people who can ride the Jungle Jam.

10.) Write and graph an inequality that represents the height of people who can ride the Racetrack.

11.) Lil' Susie is 42 in. tall, while her sister Ol' Sally is 74 in. tall. What rides can they go on together?

12.) Write an inequality that represents the statement: Ralph Wilson Stadium's maximum capacity is 73,079 people.

LESSON 11 – 1-Step Add and Subtract Inequalities

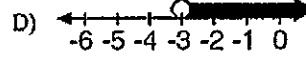
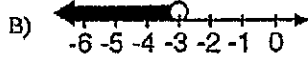
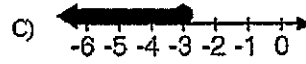
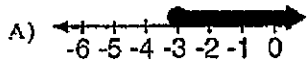
~Follow same rules as Algebra (use inverse operations)

13.) Solve: $x - 9 > 6$

14.) Solve: $4 + m \leq -12$

15.)

If the replacement set for x is the set of real numbers, which one of the following graphs represents the inequality $x + 6 \geq 3$?



16.) John has 120 pieces of candy. At most 40 of them have chocolate. Write and solve an inequality that describes how many pieces of candy, at the least, have **no** chocolate.

LESSON 12 – 1-Step Multiply and Divide Inequalities

~Use inverse operations

*******When the coefficient (# in front of variable) is negative the symbol will be reversed when you solve it!!!**

17.) $\frac{d}{9} \geq -2$

18.) $-\frac{t}{3} < 4$

19.) $4m \leq -12$

20.) $-n > -2$

21.) John needs to buy some apps that cost \$.99 each. How many apps can he buy if he has at least \$24.99?

22.)

There are 557 students and 32 teachers taking buses on a trip to New York City. Each bus can seat a maximum of 54 people. What is the *least* number of buses needed for the trip?

A) 10

B) 11

C) 9

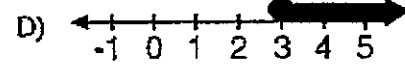
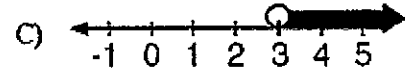
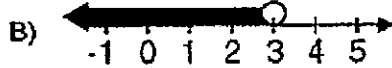
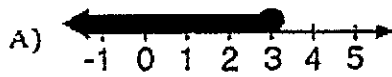
D) 12

LESSON 13 – Solve 2-Step inequalities

- 1.) Add/Subtract
- 2.) Multiply/Divide
- 3.) If coefficient is negative inequality symbol needs to be reversed

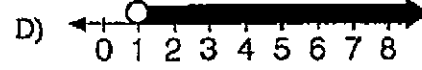
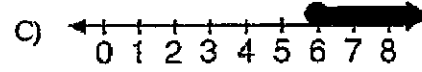
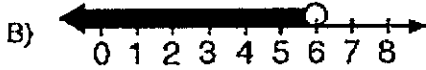
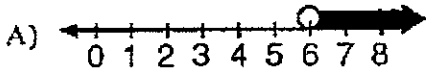
23.)

Which one of the following graphs represents the solution of the inequality $2x + 3 > 9$?



24.)

Which one of the following graphs represents the solution set of the inequality $2x - 5 > 7$?



25.)

Patty needs a total of \$80 to buy a bicycle. She has already saved \$35. If she saves \$10 a week from her earnings, what is the *least* number of weeks she must work to have enough money to buy the bicycle?

- A) 3 B) 5 C) 4 D) 8

26.) Wade wants to buy sweaters. He has \$175 and each sweater costs \$12.00. Which inequality can be used to find how many sweaters he can buy and still have a minimum of \$55 left over?

- a.) $\$175 - \$12s \geq \$55 ; s \geq 10$
- b.) $\$175 - \$12s > \$55 ; s > 10$
- c.) $\$175 - \$12s \leq \$55 ; s \leq 10$
- d.) $\$175 - \$12s < \$55 ; s < 10$

27.) The students at Camden Middle School went on a class ski trip. Each student paid \$125 and the school paid a one time fee of \$300. Altogether, the trip cost at most \$2,425. How many students went on the trip?

Part A: Write an inequality to represent this situation. _____

Part B: Solve the inequality from above to determine the number of students who went on the trip.

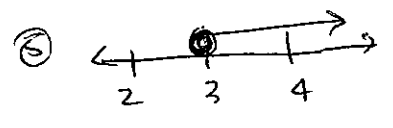
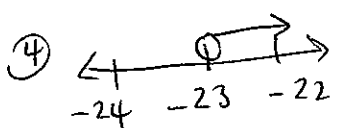
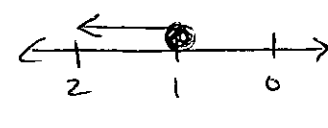
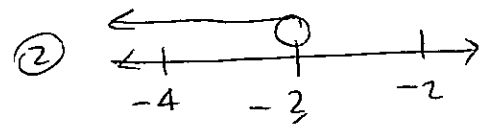
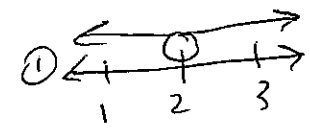
28.) Matilda needs at least \$112 to buy a new dress. She has already saved \$50. She earns \$9 an hour babysitting. **Write** and **solve** an inequality to determine the minimum hours she needs to babysit in order to buy the dress.

29.) When John bought his new computer, he purchased an online computer help service. The help service has a yearly fee of \$25.50 and a \$10.50 charge for each help session a person uses. If John can only spend \$170 for the computer help this year, what is the maximum number of help sessions he can use this year?

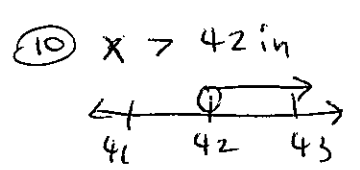
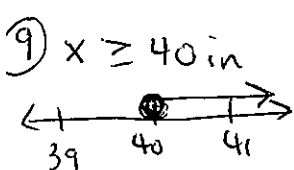
→ Distributive Property - Clear parenthesis

$$\textcircled{D} -2(x-4) \geq 10$$

Inequality Unit Study Guide Answer Key



- ⑥ (A) ⑦ (C) ⑧ (A)



⑪ Jungle Jam
The Spiral
Leapin' Lizard

⑫ $x \leq 73,079$ people

⑬ $x - 9 > 6$
 $\frac{x-9}{+9} \quad \frac{+9}{+9}$
 $x > 15$

⑭ $4 + m \leq -12$
 $\frac{4+m}{-4} \quad \frac{-4}{-4}$
 $m \leq -16$

⑮ $x + 6 \geq 3$
 $\frac{x+6}{-6} \quad \frac{-6}{-6}$
 $x \geq -3$ (A)

⑯ $x + 40 \geq 120$
 $\frac{x+40}{-40} \quad \frac{-40}{-40}$
 $x \geq 80$ no chocolate

⑰ $\frac{d}{9} \geq -2(9)$
 $\frac{d}{9} \quad \frac{+9}{+9}$
 $d \geq -18$

⑱ $-\frac{h}{3} < 4(-3)$
 $\frac{-h}{3} \quad \frac{+3}{+3}$
 $-h < -12$
 $h > 12$

⑲ $\frac{4m}{4} \leq \frac{-12}{4}$
 $m \leq -3$

⑳ $-\frac{h}{1} > \frac{-2}{-1}$
 $h < 2$

㉑ $\frac{\$.99(x)}{.99} \geq \frac{\$ 24.99}{.99}$
 $x \geq 25.24$
 $x \geq 26$

㉒ $\frac{589}{54} \leq \frac{54(x)}{54}$
 $10.9 \leq x$
 $x \geq 11$ buses

㉓ $\frac{2x+3}{-3} > \frac{9}{-3}$
 $\frac{2x+3}{-3} \quad \frac{+3}{+3}$
 $2x > 6$
 $x > 3$ (C)

㉔ $\frac{2x-5}{+5} > \frac{7}{+5}$
 $\frac{2x-5}{+5} \quad \frac{+5}{+5}$
 $2x > 12$
 $x > 6$ (A)

㉕ $\frac{\$ 10(w)}{10} + 35 \geq 80$
 $\frac{\$ 10(w)}{10} \quad \frac{-35}{-35}$
 $\frac{10w}{10} \geq \frac{45}{10}$
 $w \geq 4.5$
 $\therefore 5$ weeks (B)

㉖ (A) ㉗ $\frac{125(s)}{125} + 300 \geq \frac{2425}{125}$
 $\frac{125(s)}{125} \quad \frac{-300}{-300}$
 $125(s) \geq 2125$
 $s \geq 17$ students

㉘ $\frac{9(h)}{9} + 50 \geq 112$
 $\frac{9(h)}{9} \quad \frac{-50}{-50}$
 $9h \geq 62$
 $h \geq 6.9$
 $\therefore 7$ hours

㉙ $\frac{\$ 10.50(s)}{10.50} + \frac{\$ 25.50}{-25.50} \leq \frac{\$ 170}{-25.50}$
 $\frac{10.50(s)}{10.50} \quad \frac{-25.50}{-25.50}$
 $10.50(s) \leq 144.5$
 $s \leq 13.8$
 $\therefore 13$ lessons

㉚ $-\frac{2x}{-2} + \frac{8}{-2} \geq \frac{10}{-2}$
 $-\frac{2x}{-2} \quad \frac{+2}{+2}$
 $x + 8 \geq 10$
 $x \geq 2$