

3A Is Greater Than (>), Is Less Than (<)

Name _____ Per: _____

SHOW YOUR WORK AND IN PENCIL

1. Use the inequality $4 < 6$ to complete each row in the table.

Apply each operation to the original inequality $4 < 6$	Show the operation and Result	Is the inequality true or false? Explain.
Add 3 to both sides of $4 < 6$	$4 + 3 < 6 + 3$ $7 < 9$	True; 7 is less than 9.
Add (-3) to both sides of $4 < 6$	$4 \underline{\quad} < 6 \underline{\quad}$, so $\underline{\quad} < \underline{\quad}$	
Subtract 10 from both sides of $4 < 6$		
Multiply both sides of $4 < 6$ by 3		
Divide both sides of $4 < 6$ by 2		
Multiply both sides of $4 < 6$ by (-3)		
Divide both sides of $4 < 6$ by (-2)		

2. From the table above, explain when to switch the sign when solving an inequality.

Solve the following inequalities. Write into words what your solution is.

3. $5w - 2 > -7$

5. $-2m + 12 > -10$

7. $-5(b + 1) \geq 25 + b$

4. $-3t + 9 < 3$

6. $-4(y + 8) \leq 24$

8. $\frac{1}{2}k > 14 + k$

Solve the following multi-step inequalities.

9. $2(a - 1) + 8 > 4a + 6$

10. $3 + (x + 3) < -9 + 4x$

11. $-2(a - 1) + 8 > 4a + 6$

12. $3 + x + 3 < -9 + 4x$

13. Fill in the following table with the following words:

Is Greater Than, Is Less Than, Is Greater Than or Equal to, Is Less Than or Equal to, Is No More Than, Is At Least, Is At Most, Is Fewer Than, Is Almost, Maximum, Minimum

\geq	$>$	\leq	$<$

Write the following word sentences as an inequality. Solve and find the solution set.

14. A number and seven *is less than* four.

15. A number plus 5 *is greater than or equal to* 8 and twice the number.

16. Four times a number *is greater than* 20 decreased by the number

17. One-half the height multiplied by the sum of base 1 and base 2 equals the area of a trapezoid. Solve for h. For EC, solve for base 1.

Write an inequality to match the story problem and solve for your variable. SYW.

18. Subway sells an 8-foot sub sandwich for *at most* \$22.40. Write the inequality and find the possible solutions of the cost per foot?

19. Zach saved \$55 toward the purchase of an iPod. The cost of the iPods *is at least* \$145. Write the inequality and then find how much more does Zach need to save to buy the iPod?

20. Dustin and his best friend Jeremy found some money buried in a field. They split the money evenly, each getting *more than* \$24.28. How much money did they find in total?

21. Last Friday Marissa had \$22.50. Over the weekend, she received some money for babysitting. She now has *less than* \$32.00. How much money did she get for babysitting?

22. The speed *limit* on a city street is a *maximum* of 25 miles per hour. Write an inequality to describe a car's possible speed.

