

Name: _____ Date: _____ Period: _____

Algebra 1 Chapter 3 Study Guide

1. Write three numbers that are solutions for the inequality $10 < 5k$ (hint: solve then choose answers)
2. Write three numbers that are solutions for the inequality $4x - 18 > -10$ (see hint to #1 above)
3. Solve and graph the inequality: $7n < 84$
4. Solve and graph the inequality: $-2n - 9 \geq 15$

Graph each inequality on a number line for #7, 8, and 9.

5. $3.5 > x$
6. $-9 \leq n$
7. Draw the graph of $(5, 24]$ on a number line.
8. Your texting plan allows for 1,000 text messages per month. You've texting like crazy, with 120 messages on day 1 and 225 messages on day 2. You've got 28 more days to go. On average, how many messages do you have to work with per day for the rest of the month in order to avoid exceeding your 1,000 message allowance?

Be sure to (1) define your variable, (2) write an inequality, (3) solve the inequality, and (4) write a solution to this word problems as a sentence.

9. Solve and graph the inequality: $-4m < -100$

10. Route 80 has a minimum legal speed of 40 mph and a maximum speed of 65 mph. Write and graph an inequality that models the legal speeds on route 80.

Is your inequality an example of a 'union' or an 'intersection?' Explain your answer.

11. How do you write " F is the set of negative integers greater than or equal to -3 " in roster form?

How would you write the same thing in set-builder notation?



12. Write all subsets of the set $U = \{8,9,10\}$





13. Write 3 solutions to the inequality $\frac{x}{5} > 4$. Write them in the spaces provided below.

_____ , _____ , _____

Solve and graph each inequality, compound inequality or absolute value inequality.

YOUR FINAL GRAPH NEEDS TO BE ON THE NUMBER LINE PROVIDED!

<p>14. $4x \geq 36$</p> 	<p>15. $-6w + 9 > 201$</p> 
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<p>16. $18 + 10y \geq 3(2y - 6)$</p> 	<p>17. $-5 < 5x - 20 \leq 10$</p> 
<p>18. $-m \geq 5$ OR $m + 7 > -2$</p> 	<p>19. $-3 4x - 5 + 10 \leq -20$</p> 

Solve each absolute value equation. Be sure to **CHECK** both solutions!

20. $3|6x + 1| = 12x$

21. Independent presidential candidate Steve McSpeed is proposing a new driver's license policy. Adults must be at least 21 years old to drive a car. Those same adults can't be over 70 years old. Adults over 70 years old will have their driver's license revoked.

a.) Write a compound inequality that represents those ages that are legal for driving.

b.) Graph the solution.



c.) Is this situation an “and” or an “or” statement? Explain.

22. Imagine that you’ve scored 74% and 88% on the first two 100-point unit tests in this class. This study guide is preparing you for the third of these 100-point assessments. If you need your average on these three assessments to be 85% or above, what scores would get you at least that average?

(1) Define your variable.

(2) Write your inequality.

(3) Solve your inequality.

(4) Write your answer with a sentence or two.

23. There are 12 students of Mr. Lloyd that are die-hard Steeler fans. There are 20 students who are die-hard Steeler fans in the middle school. How many Steeler fans are not students of Mr. Lloyd in the middle school?

24. Given the universal set, $U = \{a, b, c, d, e, \dots, x, y, z\}$

with subsets $F = \{h, e, l, e, r, t, o, w, n\}$ and $G = \{l, o, w, e, r, s, a, u, c, n\}$, Find:

a) F'

b) $F \cup G$

c) $F \cap G$

d) G'