

## Honors Algebra 1 Unit 3 Test Review

Name \_\_\_\_\_

(Lessons 1-16)

Date \_\_\_\_\_ Per \_\_\_\_\_

*Solve the following equations for x.*

1.  $2x - 5 = 43$

2.  $-5(x + 2) = 3 - x$

3.  $\frac{x}{5} = \frac{x+6}{10}$

4.  $-93 = 2(6x + 1) + 1$

5.  $\frac{x-1}{x+5} = \frac{2}{7}$

6.  $\frac{-x+4}{x-4} = 3$

7.  $\frac{x}{5} - \frac{2x}{3} = 4$

8.  $5[2 - 3(4 + 2x)] = -2(x - 3)$

**Solve the following absolute value equations.**

9.  $|-8 + n| = 16$

10.  $2|x + 7| - 3 = -9$

11.  $9\left|\frac{p}{6}\right| = 3$

12.  $4|3 - 2y| = 52$

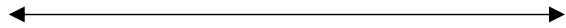
**Solve and write your answer in interval notation. Then graph your solution.**

13.  $x + 7 < -3$

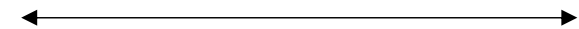
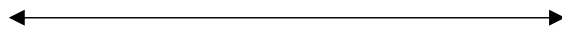
14.  $-3(x + 4) \leq 6$



15.  $3x + 5 \neq 2$



16.  $7 \leq x - 4 \leq -3$



17.  $-2 < 3(x-1) - 2 < 13$

18.  $x-4 \leq 5$  or  $3x > 36$



**Solve each absolute value inequality and write your answer in interval notation. Then graph your solution.**

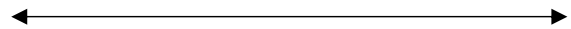
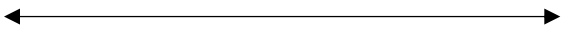
19.  $|x - 7| \leq 3$

20.  $|n - 1| - 2 < -10$



21.  $|n - 7| + 3 < 11$

22.  $\frac{|x-8|}{4} + 1 \geq 2$



23. Shaunna solved the math problem below, and wrote her answer in interval notation. Is Shaunna correct? Why or why not?

$$x < 3 \text{ or } -7x - 3 > 11$$

$$-7x > 14$$

$$x < -2$$

Answer:  $(-\infty, -2) \cup (3, \infty)$

24. Solve for  $h$  and fill in the reasons (justify) for each step.

$$3(3h - 1) = 4(h + 3)$$

Original Statement

$$9h - 3 = 4h + 12$$

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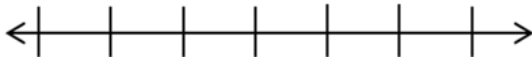


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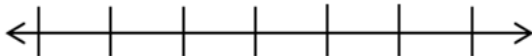
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25. Tracie was really hot at her softball practice. She yelled, "It has got to be at least 110 degrees outside today!!!" First **specify a variable**, then **write and graph an inequality** to model this situation.



Inequality:
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26. The football team is selling raffle tickets. To motivate more students to buy them, they're giving a discount to anyone who is under 18. They also want to give a discount to anyone 60 and older. First **specify a variable**, then **write and graph an inequality** to model this situation.



Inequality:
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27. What are the excluded values for the equation below? Do not solve the problem.

$$\frac{4}{x - 7} = \frac{8}{x + 11}$$

28. Simplify the expression by combining like terms:

$$-2x^2y + 14x^2 - 2y + 5x^2y - 6y - 3x^2 + y - 4x^2 + 3$$

## Answer Key

1. $x = -19$	2. $x = -\frac{13}{4}$	3. $x = 6$	4. $x = -8$
5. $x = \frac{17}{5}$	6. No solution	7. $x = -\frac{60}{7}$	8. $x = -2$
9. $n = 24$ or $n = -8$	10. No solution	11. $p = 2$ or $p = -2$	12. $y = -5$ or $y = 8$
13. $x < -10$ $(-\infty, -10)$	14. $x \geq -6$ $[-6, \infty)$	15. $x \neq -1$ $(-\infty, -1) \cup (-1, \infty)$	16. No solution
17. $1 < x < 6$ $(1, 6)$	18. $x \leq 9$ or $x > 12$ $(-\infty, 9] \cup (12, \infty)$	19. $x \leq 10$ and $x \geq 4$ $[4, 10]$	20. No Solution
21. $n < 15$ and $n > -1$ $(-1, 15)$	22. $x \geq 12$ or $x \leq 4$ $(-\infty, 4] \cup [12, \infty)$	23. No, she is incorrect. [Explanations will vary.]	24. <b>See below</b>
25. $t =$ temperature in degrees $t \geq 110$	26. $a =$ age in years $0 < a < 18$ or $a \geq 60$	27. $x \neq 7$ and $x \neq -11$	28. $3x^2y + 7x^2 - 7y + 3$

24.  $3(3h - 1) = 4(h + 3)$

$$9h - 3 = 4h + 12$$

$$5h - 3 = 12$$

$$5h = 15$$

$$h = 3$$

Original Statement

**Distributive property**

**Subtraction property of equality**

**Addition property of equality**

**Division property of equality**