Algebra 3-4 Name

Block Date

**Unit 1: Equations, Inequalities, Functions and Graphs**

**Level 2**

**Solve the equation.**

1. 1.)  2.) ** 3.) **

**Solve the equation for the indicated variable.**

4.) , for *t* 5.) , for *U*

**Solve the inequality. Graph the solution set on a number line below.**

6. ) 8  2 + 2*k* 7.) 9 – 2r  5

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**Solve the absolute value equation.**

8.)  9.) 

**10. Find the domain and range of the relation, then determine whether it is a function.**

**Domain:**

**Range:**

**Function?**

**Level 3**

**Are the following *always*, *sometimes*, or *never* true?**

14) 

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| a. | always | b. | sometimes | c. | never |

15.) 

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| --- | --- | --- | --- | --- | --- |
| a. | always | b. | sometimes | c. | never |

**Solve the equation.**

16.)  ` 17.) 

**Solve the compound inequality. Graph the solution on the number line below.**

18.) 4*x* + 3  –17 and 7*x* – 4  10 19.) 9*x* – 5 < –41 or 3*x* + 13 > 7

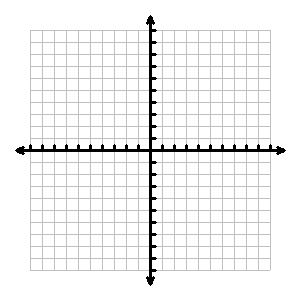
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20.)  21.) 

22.) **The diameter of a tree varies directly with its age. A 15-year-old tree has a 3.75 in. diameter. How old will the tree be when it has a 25 in diameter?**

**22.**

23.) Graph:

**Using slope-intercept form, write the equation of the line with the given characteristics.**

24.)through 25**.)** Parallel to and through

**24. 25.**

**26. Using point-slope form, write the equation of the line through and .**

**26.**

**27. Using standard form, write the equation of the line with slope = 6 and through the point .**

**27.**

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**Level 4**

**Use an algebraic equation to solve the problem.**

31.) Two cars leave Denver at the same time and travel in opposite directions. One car travels 10 mi/h faster than the other car. The cars are 300 mi apart in 3 h. **Write an equation and solve to find out how fast each car is traveling.**

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