

Algebra 1: Unit 1 Test B Study Guide 2
Solving Equations and Inequalities

Name: _____ Period: _____

For problems 1-3, solve for the indicated variable.

1) $5x - 4y = 12$ solve for y

2) $P = 4L + 4W$ solve for L

3) $G = \frac{2}{3}M + 12$ solve for M

- 4) Ms. Thompson took her daughter to the zoo. Unfortunately, she lost track of how many sodas she has let her drink, and she's worried because she gets hyperactive if she has too much sugar. At the zoo, bags of popcorn cost \$1.75 and drinks cost \$2.25. The total cost, t , for p popcorn bags and d drinks can be described by the equation $t = 1.75p + 2.25d$. Solve the equation for the variable that will help Ms. Thompson determine the number of drinks they've purchased.

For problems 5-8, solve the inequality. For full credit, show ALL work.

5) $-7x - 5 > 37$

7) $\frac{1}{4}x + 3 < -4$

6) $-9 + 11b \leq -4 + 12b$

8) $\frac{2x+4}{7} \geq 6$

9) Janine solved for x in the following problem.

$$\begin{aligned} 3(3-x) - 4x &\geq -12 \\ 9 - 3x - 4x &\geq -12 \\ 9 - 7x &\geq -12 \\ -7x &\geq -21 \\ x &\geq 3 \end{aligned}$$

c) Solve the problem correctly for her.

$$3(3-x) - 4x \geq -12$$

a) Circle her mistake.

b) Explain the error Janine made.

10) Savannah has \$100 to spend at the mall. She is buying a pair of pants for \$42 and as many shirts as possible for \$23 each.

a. Write an inequality that represents the number of shirts n that Savannah can purchase and remain within her spending limit.

b. Solve your inequality from part a to determine how many shirts Savannah can purchase

10) _____ Shirts

11) Suppose a classmate is having difficulty solving $3(x-5) > 5x + 10 + 3x$. Explain how to solve the inequality, showing all the necessary steps and identifying the properties you would use.

a) $3(x-5) > 5x + 10 + 3x$

a) Given

b) _____

b) Distributive Property

c) $3x - 15 > 8x + 10$

c) Simplify/combine like terms

d) $-15 > 5x + 10$

d) _____

e) $-25 > 5x$

e) Subtraction Property of Inequality

f) _____

f) Division Property of Inequality

g) $x < -5$

g) _____