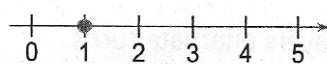


Unit 6 Study Guide

Skill	Description	Example
Solving Equations	<p>To solve an equation, find the value of the variable that makes the left side of the equation equal to the right side.</p> <p>To solve an equation, isolate the variable on one side of the equation.</p> <p>Use inverse operations or a balance strategy to perform the same operation on both sides of the equation:</p> <ul style="list-style-type: none"> • Add the same quantity to each side • Subtract the same quantity from each side • Multiply or divide each side by the same non-zero quantity <p>Algebra tiles and balance scales can help model the steps in the solution.</p>	<p>Solve the equation:</p> $3y - 2 = y + 4$ <p>Solution</p> $3y - 2 = y + 4$ $3y - 2 + 2 = y + 4 + 2$ $3y = y + 6$ $3y - y = y - y + 6$ $2y = 6$ $\frac{2y}{2} = \frac{6}{2}$ $y = 3$
Solving Inequalities	<p>An inequality is a statement that one quantity is less than ($<$) another, greater than ($>$) another, less than or equal to (\leq) another, or greater than or equal to (\geq) another.</p> <p>The inequality sign reverses when you multiply or divide each side of the inequality by the same negative number.</p> <p>A linear inequality may be true for many values of the variable. We can graph the solutions on a number line.</p>	<p>Solve the inequality and graph the solution:</p> $-2s - 2 \leq s - 5$ <p>Solution</p> $-2s - 2 + 2 \leq s - 5 + 2$ $-2s \leq s - 3$ $-2s - s \leq s - 3 - s$ $-3s \leq -3$ $\frac{-3s}{-3} \geq \frac{-3}{-3}$ $s \geq 1$ <p>Since we divide each side by the same negative number, the inequality sign is reversed.</p> 

Unit 6 Review

6.1 1. Solve each equation. Verify the results.

a) $f + 6 = 3$

$f = \underline{\hspace{1cm}}$ is correct.

b) $g - 5 = -2$

$g = \underline{\hspace{1cm}}$ is correct.

c) $5h = 25$

$h = \underline{\hspace{1cm}}$ is correct.

d) $-2k = 6$

$k = \underline{\hspace{1cm}}$ is correct.

2. Solve each equation. Verify the solution.

a) $4x - 2 = 6$

$x = \underline{\hspace{1cm}}$ is correct.

b) $2 - 3c = -7$

$c = \underline{\hspace{1cm}}$ is correct.

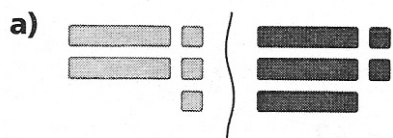
c) $2v - 3 = -9$

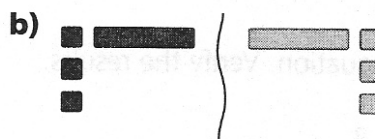
$v = \underline{\hspace{1cm}}$ is correct.

d) $-2(2 + w) = -20$

$w = \underline{\hspace{1cm}}$ is correct.

- 6.2** 3. Write the equation modelled by each set of algebra tiles. Solve the equation.





4. Solve each equation.

a) $9 - 2w = w - 6$

b) $e - 6 = 6 - e$

c) $3n + 1 = 3 + n$

d) $m - 2 = 3m + 4$

5. Solve each equation. Verify the solution.

a) $6 + \frac{s}{2} = 7$

Left side = $6 + \frac{s}{2}$

Right side = _____

$s = \underline{\hspace{1cm}}$ is correct.

b) $4 + \frac{2x}{3} = 2$

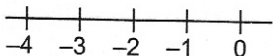
Left side = $4 + \frac{2x}{3}$

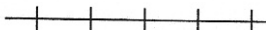
Right side = _____

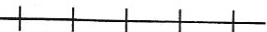
$x = \underline{\hspace{2cm}}$ is correct.

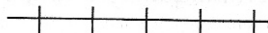
6.3 6. Graph each inequality.

Write 3 numbers that are possible solutions for each inequality.

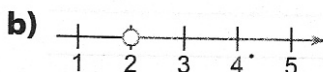
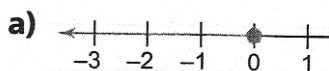
a) $q > -3$ 

b) $w \leq 0$ 

c) $t \geq -1$ 

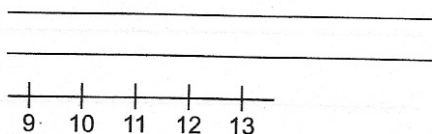
d) $r < 6$ 

7. Write an inequality whose solution is graphed on the number line.

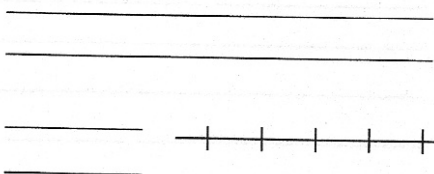


6.4 8. Solve each inequality. Graph the solution.

a) $d - 6 > 4$

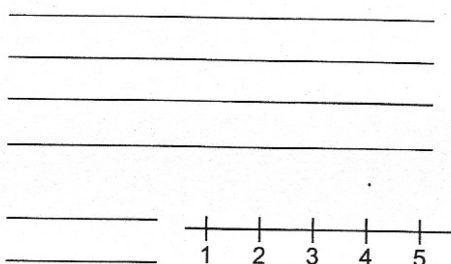


b) $2f + 1 < -3$

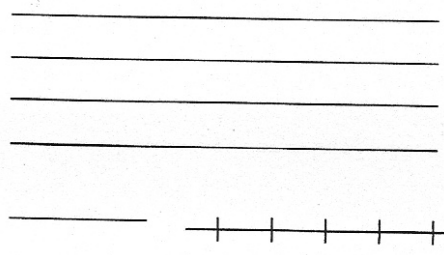


9. Solve each inequality. Graph the solution.

a) $4j - 1 \geq 2j + 3$



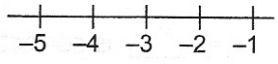
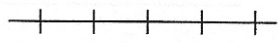
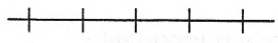
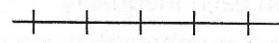
b) $k - 2 < 2 - k$



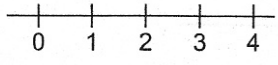
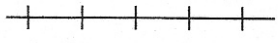
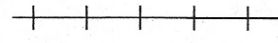
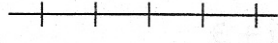
6.5 10. State whether you would reverse the inequality sign to solve each inequality.

- a) $2z < -4$ _____ b) $-2x \geq 4$ _____
 c) $\frac{c}{-2} < 4$ _____ d) $\frac{v}{2} \geq -4$ _____

11. Solve each inequality in question 10. Graph the solution.

- a) $2z < -4$  _____
 b) $-2x \geq 4$  _____
 c) $\frac{c}{-2} < 4$  _____
 d) $\frac{v}{2} \geq -4$  _____

12. Solve each inequality and graph the solution.

- a) $-3b + 4 \geq -5$ _____
 b) $n + 2 < 2n - 2$ _____
 c) $-5 - m < 3 + m$ _____
 d) $2 - \frac{x}{2} > 1$ _____
-  _____
 _____
 _____
 _____