Unit 6 – Final Review

Section 6.1

1. Solve each equation. Verify the results.

   a) $f + 6 = 3$
   b) $g - 5 = -2$
   c) $5h = 25$
   d) $-2k = 6$

2. Solve each equation. Verify the solution.

   a) $4x - 2 = 6$
   b) $2 - 3c = -7$
   c) $2v - 3 = -9$
   d) $-2(2 + w) = -20$

Section 6.2

3. Solve each equation.

   a) $9 - 2w = w - 6$
   b) $e - 6 = 6 - e$
   c) $3n + 1 = n + 3$
   d) $m - 2 = 3m + 4$

4. Solve each equation. Verify the solution.

   a) $6 + \frac{n}{2} = 7$
   b) $4 + \frac{2x}{3} = 2$

5. Solve each equation.

   a) $3 + \frac{n}{2} = 2 + \frac{2n}{3}$
   b) $\frac{1}{3}(x + 3) = \frac{3}{5}(1 + x)$

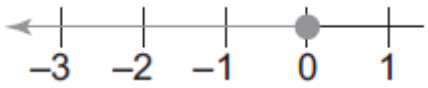
Section 6.3

6. Graph each inequality. Write 3 numbers that are possible solutions for each inequality.

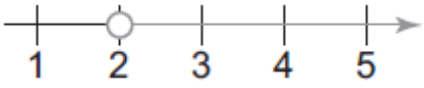
   a) $q > 3$
   b) $w \leq 0$
   c) $t \geq -1$
   d) $r < 6$

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

   a)



   b)



Section 6.4

8. Solve each inequality. Graph the solution.

   a) $d - 6 > 4$
   b) $2f + 1 < -3$
   c) $4j - 1 \geq 2j + 3$
   d) $k - 2 < 2 - k$

Section 6.5

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

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

10. Solve each inequality in question 9. Graph the solution.

11. Solve each inequality and graph the solution.

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

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12. Identify the errors .

a)

$$3x + 5 = 18$$
$$\frac{3x}{3} + 5 = \frac{18}{3}$$
$$x + 5 = 6$$
$$x + 5 - 5 = 6 - 5$$
$$x = 1$$

b)

$$\frac{-5x}{4} = 2$$
$$\frac{-5x}{4} \times 4 = 2 \times 4$$
$$-5x = 6$$
$$-5x + 5 = 6 + 5$$
$$x = 11$$

13.

Car Rental Company A charges \$29 a week, plus \$13 per kilometre driven.
Car Rental Company B charges \$85 a week, plus \$6 per kilometre driven.

Determine the distance you must drive for the two rental costs to be the same.
Model the problem with an equation.

14.

Claire has \$18. She wants to buy a book and a magazine. The book costs \$13.28.
How much can Claire spend on a magazine?

a) Choose a variable, then write an inequality that can be used to solve this problem.
b) Solve the problem.

15.

To raise money for charity, a group of students decide to sell designer T-shirts.
The cost to rent the machine that prints the T-shirts is \$172.
The cost to buy and print a design on each T-shirt is \$13.
The students plan to sell the T-shirts for \$17 each.
Let x represent the number of T-shirts.

How many T-shirts must be sold before the students start making a profit?

a) Model this problem with an equation.
b) Solve the problem.
c) Verify the solution.