Intermediate Algebra
Chapters 3 & 4 Practice Test, Non-Calculator

I.   **Solve for x. Write Inequality answers in Interval Notation.**

   1. $3 - 2x = 4x + 5$

   2. $4 - x = 3x + 12$

   3. $3 - 2x > 11 + x$

   4. $3(2x + 1) + 4 = x$

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

   6. $2 + 3(2x + 1) \leq 3x - 4$

   7.   The sum of x and 2, multiplied by 3, is 9. Translate, then solve.

   8.   Two times x minus 7 is 5. Translate, then solve.

II.   **Follow the directions provided.**

   9.   Decide which of the following is a solution to the system of equations; $(2, -1)$ or $(3, 2)$:
           $3x - 2y = 5$
           $-2x + 4y = 2$

III.   **Solve the following systems of equations.**

   10. $x + 3y = -1$
           $2x + 3y = -5$

   11. $4x + 9y = -3$
           $x - 3y = -6$

   12. $2x + 3y = -13$
           $3x - 2y = 0$

IV.   **Solve the equation for the given variable.**

   13. $2a + 3b = a \; for \; a$

   14. $A = \frac{1}{2}h(a + b) \; for \; b$

   15. $V = \frac{1}{3}\pi r^2 h \; for \; h$

Answers:

1. $x = \frac{-1}{3}$
2. $x = -2$
3. $\left(-\infty, \frac{-8}{3}\right)$
4. $x = \frac{-7}{5}$
5. $x = \frac{6}{5}$
6. $(-\infty, -3]$
7. $3(x + 2) = 9 \qquad x = 1$
8. $2x - 7 = 5 \qquad x = 6$
9. $(3,2)$
10. $(-4,1)$
11. $(-3,1)$
12. $(-2,-3)$
13. $a = -3b$
14. $b = \frac{2A}{h} - a$
15. $h = \frac{3V}{\pi r^2}$