Intermediate Algebra Review (Sections 1.2, 1.3, 1.4, 1.5, 1.6, and 1.7)

Solve each of the following equations using algebra.

1.) $9x - 5(x - 3) = 27$

2.) $4x - 2(x + 7) = 2(x - 6)$

3.) $3(x - 5) + 8 = 3x - 7$

4.) $4x^2 - 3 = 125$

5.) $x^2 = 8x - 15$

6.) $2x^2 - 6x = -1$

7.) $2x^3 - x^2 = 18x - 9$

8.) $\dfrac{64 - 5x}{4} = \dfrac{7x}{4} - \dfrac{2x + 1}{3}$

9.) $\dfrac{5}{x+2} + \dfrac{2}{x-4} = \dfrac{30}{x^2 - 2x - 8}$

10.) $\dfrac{2x}{2x-1} + \dfrac{1}{x} = \dfrac{1}{2x-1}$

Solve each inequality and **graph** the solution set on a number line. Write your answer using both **set builder and interval notation.**

11.) $-3 \le 2x + 15 < 6$

12.) $\dfrac{2x-5}{2} + 2 > \dfrac{3x+7}{4}$

←--→   ←--→

Interval Notation _____   Interval Notation _____

Set Builder Notation _____   Set Builder Notation _____

Perform the indicated operations. Write your answer in standard form.

13.) $(7 + 2i) - (3 - 4i)$ 14.) $(3 + 7i)(2 - 5i)$ 15.) $\left(2 + \sqrt{-49}\right) + \left(1 - \sqrt{-9}\right)$

16.) Solve the formula below for t.   17.) Solve the formula below for b.

$A = P + Prt$ $A = \dfrac{h}{2}(b + c)$

18.) A salesperson earns $300 per week plus 5% commission of sales. How much should be sold to earn

$800 in a week? (**Show your algebra.**)

19.) The Allen family sold their house. After paying the real estate agent a commission of 7% of the

selling price and paying $1499 in other costs and $82,000 on the mortgage, they received

$95,344.65. What was the selling price of the house? (**Show your algebra**.)

20.) A grocer wants to mix two kinds of nuts. One kind sells for $1.00 per pound and the other sells for

$4.99 per pound. He wants to mix a total of 21 pounds and sell it for $1.95 per pound. How many

pounds of each kind should he use in the new mix? (**Show your algebra**.)