

## Week 2 Math 1508 Worksheet #1

Solve the equations below: Give our solution in interval notation

1.  $4 - 6x \geq -2x + 60$

2.  $2x - \frac{1}{2} \geq \frac{2}{3}x + \frac{3}{4}$

3.  $|6 - 2x| \leq -18$

4.  $|6 - 2x| \geq -18$

5.  $\sqrt{9 - 18x} \leq 0$

6.  $\sqrt{9 - 18x} > 0$

7.  $\frac{1}{x+5} < 0$

Factor completely. If the polynomial is not factorable write NOT FACTORABLE.

8.  $x^3 - 27$

9.  $12x^2 - 5x - 3$

10.  $4x^2 + 25x + 6$

11.  $2x^2 + 5x + 2$

12.  $10x^2 + 11x - 6$

13.  $8n^3 + 1$

**Helpful formulas:**

1. **Difference of Squares:**  $a^2 - b^2 = (a + b)(a - b)$

2. **Sum of cubes:**  $a^3 + b^3 = (a + b)(a^2 - ab + b^2)$

3. **Difference of cubes:**  $a^3 - b^3 = (a - b)(a^2 + ab + b^2)$