Math III H Spiral Review

1. Solve $-3x^2 + 4x - 4 = 0$ by using the Quadratic Formula.

A. $\frac{-2 \pm 2i\sqrt{2}}{3}$ **B.** $\frac{2}{3} \pm 4i\sqrt{2}$ **C.** $\frac{2 \pm 2i\sqrt{2}}{3}$ **D.** $2, -6$

2. Factor: $9x^2 - 121$

3. Factor: $4x^2 + 17x - 15$

4. Find the solutions to the equation by factoring: $2x^2 - 15x = -28$

5. Identify the following features of the quadratic function: $f(x) = -4x^2 - 8x + 7$

A. Axis of Symmetry B. Vertex C. Y-intercept D. X-intercepts E. Direction of Opening F. Max/Min Value

G. Domain/Range

6. Find the product: $(7 - 4i)(3 + 7i)$

7. Find the quotient: $\frac{5-i}{2+3i}$

8. Amy has two gardens.

Her flower garden has the following dimensions:

Length: $4x^2 - 5x + 1$ **Width:** $x^2 + 6x + 7$

Her vegetable garden has the following dimensions:

Length: $3x^2 + 2x + 9$ **Width:** $x^2 - x - 5$

Find the expression that represents how much greater the perimeter of Amy's flower garden is than the perimeter of her vegetable garden.

9. Find the difference: $(5x^2 - 9x + 13) - (-2x^2 + 14x + 26)$

10.Simplify: $(3x - 7) - 9(x + 3) + 4(3x + 5)$