

Standard form: $a + bi$ **Prob. 15-16 Graphing Parabolas**

- Vertex. $x = \frac{-b}{2a}$ then plug in "x" to find "y".
- Find the intercepts: x-int $\rightarrow y = 0$ y-int $\rightarrow x = 0$.
- Find the equation and graph the axis of symmetry. $(x = \frac{-b}{2a})$
- Graph the vertex, and intercepts. Use reflection to graph a total of 5 points. (There may be more points requested on the test). Graph the parabola. (Must look symmetric about the axis).

Prob. 20/22 Maximum Area

- Include drawing.
- Equation for the length of the fence.
- Use A(l) or A(w) to find the length or the width and the maximum area with correct units. (Vertex).
- Find the other dimension with the correct units.

Prob. 35/37 Graphing Polynomial Functions

- Find all the zeros by factoring and setting = 0
- Find the y-intercept.
- Approximate the Critical Points.
- Use the end-behavior and the number of turns to graph.

Prob. 55-58 Finding all the zeros of Polynomial Functions using the Rational Root, Remainder, and Factor Theorems

- Find the possible rational zeros ($\frac{p}{q}$'s)
- Find one that works using the remainder and factor theorems.
- Use synthetic division and finish factoring.
- Find the zeros.

Prob. 71-76 Graphing Rational Functions:

- Find the vertical asymptote(s) (VA) if any. ($x = \text{constant}$)
- Find the horizontal asymptote (HA) if any. ($y = \text{constant}$)
- Find the slant asymptote (SA) if any. ($y = mx + b$) (Long or synthetic division, drop remainder).
- Tables of values to the left and right of any VA.
- Graph.

Prob. 85, 88, 90 Solve polynomial and rational inequalities:

- Find the zeros and restrictions (if any).
- Draw a number line with the intervals.
 - (Parenthesis) for $-\infty$, ∞ or restrictions.
 - [Brackets] for zeros if \leq or \geq .
- Test values of "x" on each interval.
- Answer the problem.

Prob. 94, 95, 97 Modeling with variation

- Direct variation: $y = kx$
- Inverse variation: $y = \frac{k}{x}$
- Joint variation: $y = k(a)(b)(c)$
- Combined variation: combination of direct, inverse and/or joint.