

NAME:

## Math 010 Fall 22 Mock Test 3

**Directions:** Do all problems. Partial credit will be awarded. No notes/books/friends allowed. No question requires a calculator but you are welcome to use one. Do not use any decimals in your answers. Graphing calculators above the level of a TI - 84 Plus are not allowed (in particular, calculators with a built in CAS or QWERTY keyboard are not allowed). You have 50 minutes to complete this exam.

**REMEMBER TO SHOW ALL WORK**

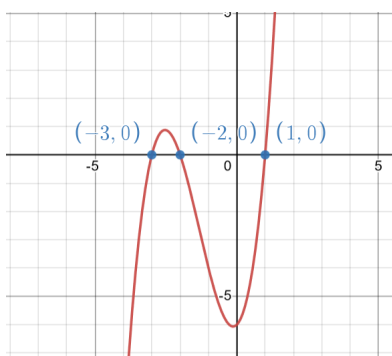
1. (10 points) Simplify  $(8y^2 - 1y + 5) - (3y^2 - 5y + 1)$

2. (10 points) Simplify  $(2x + 3)(2x - 3)$

3. (5 points) Simplify  $(2x + 3)(2x^2 - x - 5)$

4. (10 points) For the function  $f(x) = x^2 + 10x + 24$  find  $f(0)$  and  $f(-4)$

5. (5 points) Find the polynomial that makes this graph.



6. (5 points) Compute  $\sqrt{-8} + \sqrt{-2}$

7. (10 points) Compute  $(4 + 3i)^2$

8. (10 points) Compute  $\frac{2}{2-3i}$

9. (10 points) Factor  $x^2 - 9$

10. (5 points) Factor  $18x^2 - 39x + 18$

11. (10 points) Solve  $3x^2 = 27$

12. (10 points) Solve  $x^2 + 24 = -10x$