

Secondary Math III  
Finding Zeros of Quadratics/Complex Numbers  
Assignment 2.2

Name \_\_\_\_\_  
Period \_\_\_\_\_

Carnegie Page 110, problems 3 & 4

**Find the zeros of the quadratic function by setting  $f(x) = 0$  and solving. Leave square roots in answers, but simplify.**

1.  $f(x) = x^2 + 4x - 5$

2.  $g(x) = -x^2 + 6x$

3.  $d(x) = x^2 + 3x + 1$

4.  $n(x) = 3x^2 - 6x + 3$

5.  $r(x) = x^2 + 7x + 3$

6.  $f(x) = (x-1)^2 - 4$

7.  $f(x) = (x+4)^2 - 25$

8.  $g(x) = \left(x - \frac{1}{2}\right)^2 - 49$

9.  $m(x) = x^2 + 6x + 6$

10.  $f(x) = x^2$

Calculate each power of  $i$  without a calculator.

11.  $i^7$

12.  $i^{10}$

13.  $i^{45}$

14.  $i^{20}$

Simplify each expression using  $i$ .

15.  $\sqrt{-49}$

16.  $38 - \sqrt{121} + \sqrt{-100}$

17.  $\frac{24 + \sqrt{-12}}{6}$

Add, subtract and/or multiply the following expressions. Write final answer in standard form:  $a + bi$

18.  $(2 + 5i) - (7 - 9i)$

19.  $(2 + 5xi)(7 - xi)$

20.  $9 + 3i(7 - 2i)$

21.  $(x - 6i)^2$