Math 1111   Sample Test 2   Name _____

1.1 – 1.6   Date _____

Version A

Directions: To receive partial credit you must show your work on a problem. Circle final answers. All problems are 5 points each.

Graph the following equation. (#1)   Find the x- and y- intercepts.   (#2)

1. $y = x^2 - 2x$ 2. $y = (x + 2)^2$

Test for symmetry with respect to the x-axis, y-axis, and origin.   (#3)   Determine if $x = -3$ is a solution. to the following equation   (#4)

3. $y = x^4 - x^2 + 3$ 4. $3x^2 + 2x - 5 = 2x^2 - 2$

Solve the equation. (#5)   Solve the equation. (#6)

5. $3(x + 3) = 5(1 - x) - 1$ 6. $\dfrac{x}{5} - \dfrac{x}{2} = 3 + \dfrac{3x}{10}$

7.   One positive number is one-fifth of another number. The difference between the two numbers is 76. Find the numbers.

8.   You invested a total of $15,000 at 8 % and 9.5% simple interest. During one
      year, the two accounts earned $1326.75. How much did you invest in each account?

Solve for r.   (#9)

9. $A = P + Prt$

Solve by any method. (#10)

10. $2x^2 = 19x + 33$

Solve by any method. (#11)

11. $(4x + 7)^2 = 44$

Solve by any method. (#12)

12. $x^2 + 8x + 14 = 0$

Perform the operation. Write the result in standard form of a complex number.
(#13 and #14)

13. $\left(8 + \sqrt{-18}\right) - \left(4 + 3i\sqrt{2}\right)$

14. $\sqrt{-6} \ \sqrt{-2}$

Perform the operation. Write the result in standard form of a complex number.
(#15 and #16)

15. $(1 - 2i)^2 - (1 + 2i)^2$

16. $\dfrac{6 - 7i}{1 - 2i}$

Divide. (#17)

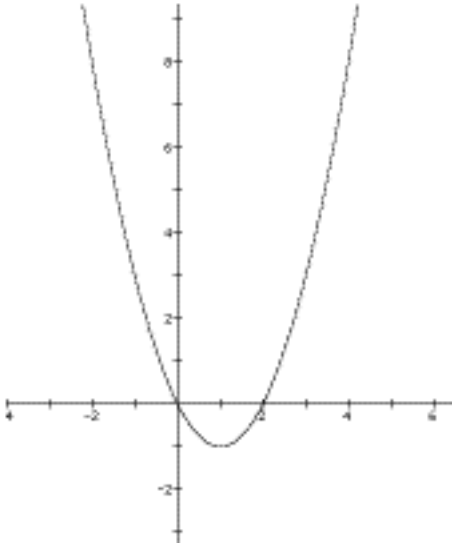17. $\dfrac{-14}{2i}$

Solve the equation. (#18)

18. $x^3 + 2x^2 + 3x + 6 = 0$

Solve the equation. (#19 and #20)

19. $x + \sqrt{31 - 9x} = 5$

20. $|2x - 1| = 5$

Answers to Sample Test 2

1.	2. x-intercept = (–2,0), y-intercept = (0,4)
(graph of upward parabola with vertex slightly below origin)	
3. x-axis – NO yaxis – YES origin - NO	4. Yes
5. x = –5/8	6. x = –5
7. 95 and 19	8. 6550 @ 8% 8450 @ 9.5%
9. $r = \dfrac{A-P}{Pt}$	10. x = –3/2 x = 11
11. $x = -\dfrac{7}{4} \pm \dfrac{\sqrt{11}}{2}$	12. $x = -4 \pm \sqrt{2}$
13. 4	14. $x = -2\sqrt{3}$
15. –8i	16. 4 + i
17. 7i	18. $x = -2, \pm i\sqrt{3}$
19. x = 3, –2 (Don't forget to check!)	20. x = 3, –2