Math 1111   Sample Test 5   Name _____

Sections 3.3, 3.4, 6.1, 6.2   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.

Divide the following polynomials.

1. $\left(2x^2 + 10x + 12\right) \div (x + 3)$

Divide the following polynomials.

2. $\left(4x^3 - 7x^2 - 11x + 5\right) \div (4x + 5)$

Divide the following polynomials.

3. $\left(5x^3 - 6x^2 + 8\right) \div (x - 4)$

Divide the following polynomials.

4. $(7x + 3) \div (x + 2)$

Factor the following polynomial with the given value of x that is a zero.

5. $x^3 - 7x + 6$ given $x = 2$

Find all the zeros of the function.

6. $f(x) = (x + 6)(x + i)(x - i)$

Find all the possible rational zeros of the function **only**. (#7 and #8)

7. $f(x) = x^3 - 6x^2 + 11x - 6$

8. $f(x) = -4x^3 + 15x^2 - 8x - 3$

Find all the real zeros of the function. (#9 and # 10)   Show work!

9. $f(x) = x^3 - 6x^2 + 11x - 6$

10. $g(y) = 2y^4 + 7y^3 - 26y^2 + 23y - 6$

Determine if the ordered pair is a solution of the system of equations. (#11 and #12)
You must show work !

11. $4x - y = 1$

$\dfrac{-1}{2}, -3$

$6x + y = -6$

12. $4x - y = 1$

$(0, -3)$

$6x + y = -6$

Solve the system of equations by substitution method.   Show work!

13. $x^2 - y = 0$
    $2x + y = 0$

14. $x - y = 0$
    $5x - 3y = 10$

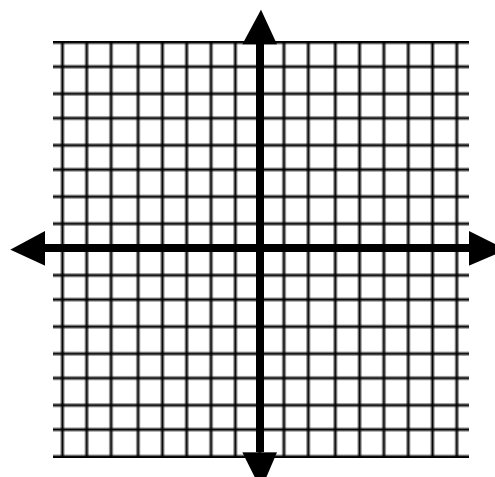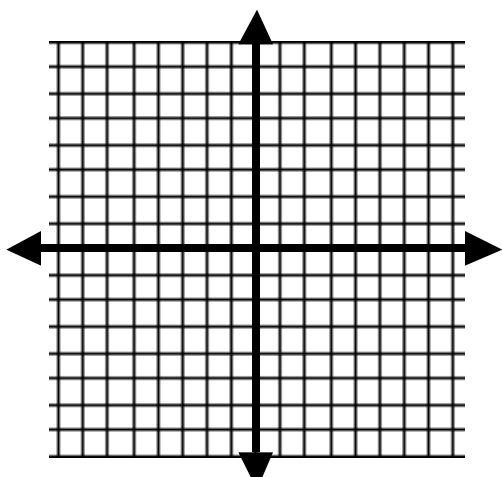Solve the system of equations by elimination method.   Show work!

15. $3x + 2y = 10$
    $2x + 5y = 3$

16. $x - y = 2$
    $-2x + 2y = 5$

Solve the system of equations by graphing method. Draw graphs as accurate as possible.

17. $x - y + 3 = 0$
    $x^2 - 4x + 7 = y$

18. $7x + 8y = 24$
    $x - 8y = 8$

Answers Sample Test 5

1)	$2x + 4$	11)	Yes !
2)	$x^2 - 3x + 1$	12)	No !
3)	$5x^2 + 14x + 56 + \dfrac{232}{x - 4}$	13)	(0,0) and (–2,4)
4)	$7 - \dfrac{11}{x + 2}$	14)	(5,5)
5)	$(x - 2)(x + 3)(x - 1)$	15)	(4,–1)
6)	$x = -6, \quad x = i, \quad x = -i$	16)	No solutions
7)	Possible zeros $\pm 1, \pm 2, \pm 3, \pm 6,$	17)	Graphs should cross at: (1,4) and (4,7)
8)	$\pm 1, \pm \dfrac{1}{2}, \pm \dfrac{1}{4}, \pm 3, \pm \dfrac{3}{2}, \pm \dfrac{3}{4}$	18)	Graphs should cross at: (4,–1/2)
9)	$x = 1, \ x = 2, \ x = 3$		
10)	$x = 1, \ x = -6, \ x = 1/2$		