MATH 70 TEST 3 **First and Last Name:** _____

CHAPTERS 5–6 **FALL 2010**

DIRECTIONS: No calculators may be used. Be sure to ***show ALL of your work***. Depending on the problem, you may receive **NO CREDIT** if no work is shown even if the answer is correct. Don't take that chance. If your answer is a fraction, reduce it to lowest terms. If there is a blank, write your answer in the blank, otherwise **circle your answer**. Once the test is returned, the **KEY** will be posted outside my office. Use the key to check and correct your work. **Keep this test** to study from for the final exam.

EVALUATE the following expressions involving exponents.

1. 9^0

2. -5^{-2}

3. $2^{-2} + 3^{-1}$

SIMPLIFY the following expressions involving exponents. Give the value of the coefficients without using exponents (i.e. simplify), and write your answer with no negative exponents

4. $\dfrac{c^{-12}}{c^{-6}}$

5. $(2xy^5)^3(x^3)^2$

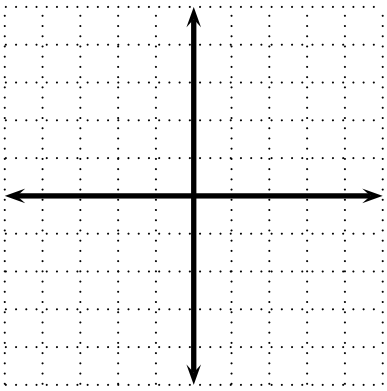
6. $\dfrac{-15x^{12}}{3x^3}$

7. $\dfrac{(2n^3)^{-2}(n^{-2})^3}{(6n^4)^{-1}}$

GRAPH the equation by completing the table of values.

8. $y = 4 - x^2$

x	y
-2	
-1	
0	
1	
2	



Find each product.

9. $(x + 3)(x - 4)$

10. $(2x + 3)(3x + 5)$

11. $(x + 3)^3$

12. $(x - 2)(5x^2 - 3x + 2)$

Find each quotient.

13. $\dfrac{15x^{12} - 25x^{15} + 5x^3}{5x^3}$

14. $(4x^3 + 8x^2 + 9x + 14) \div (2x + 3)$

SOLVE the quadratic equations.

15. $x^2 = 11x - 24$

16. $x(2x + 11) = -5$

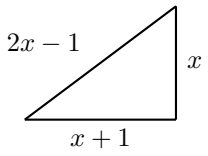
FACTOR the following polynomials completely.

17. $x^4 - 81$

18. $8x^3 + 27$

19. $4 - 2q - 6p + 3pq$

20. The longer leg of a right triangle is 1 foot longer than the shorter leg. The hypotenuse is 1 foot shorter than twice the shorter leg. Find the length of the shorter leg of the triangle.



EXTRA CREDIT: Factor completely: $x^2 + xy - 2y - 4$