

EXAM 3/CHAPTERS 5-6

86 POINTS POSSIBLE

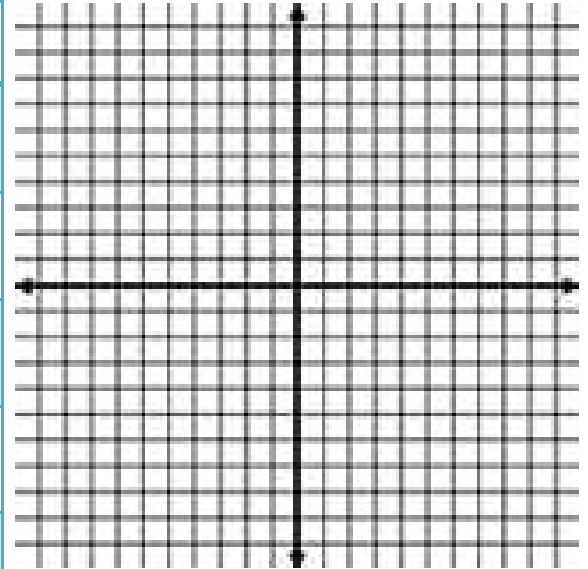
NAME \_\_\_\_\_

LEAVE ALL ANSWERS EXACT (NO DECIMALS!) UNLESS THE PROBLEM INDICATES OTHERWISE

SHOW ALL WORK IN ORDER TO EARN FULL CREDIT

1. (5 POINTS) Graph the equation  $y = x^2 + 1$  by plotting 5 points. **LABEL AXES AND WRITE IN THE SCALE!**

$x$	$y = x^2 + 1$	$(x, y)$



2. (3 POINTS) Subtract, as indicated.

$$(-4x^2 - 8x^2y - 13xy^2 - 6y^2) - (2x^2 - 4xy^2 + 10y^2)$$

3. (2 POINTS) Determine the degree of the polynomial.

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

Degree: \_\_\_\_\_

4. (10 POINTS) Multiply and simplify.

a. (2 POINTS)

$$(11x^{-2}y^{-1})(4x^{-5}y^3)$$

b. (4 POINTS)

$$(2x+1)^2$$

c. (4 POINTS)

$$(x-5)(3x^2-10x+2)$$

5. (8 POINTS) Divide.

a. (3 POINTS)

$$\frac{48x^4y^3 + 32x^3y^2 - 16x^2y}{8x^2y}$$

b. (5 POINTS)

$$(x^2 + 6x + 1) \div (x + 2)$$

6. (18 POINTS, 6 POINTS EACH) Factor. **I will only award partial credit if work is shown.**

a.  $81x^2 - y^2$

b.  $x^3 + 5x^2 - 4x - 20$

c.  $x^3 + 14x^2 + 49x$

7. (20 POINTS, 10 POINTS EACH) Factor by grouping. **No credit will be given for trial and error.**

a.  $5x^2 - 11x + 6$

b.  $9x^2 - 25xy - 6y^2$

8. (20 POINTS, 10 POINTS EACH) Solve. Your result(s) should be given in roster notation.

a.  $x(x-10)(2x-7) = 0$

b.  $3x^2 - 5x = 8$