

MATH 190 QUIZ 2

September 8, 2014

Name: ANSWERS

Instructions: (1) No calculators! (2) Write answers in the space provided.

1. Complete the following formulas:

(a)  $(a+b)^2 = a^2 + 2ab + b^2$  (b)  $a^2 - b^2 = (a-b)(a+b)$  (c)  $-(a+b) = -a - b$

(d)  $(a-b)^2 = a^2 - 2ab + b^2$  (e)  $(x+a)(x+b) = x^2 + (a+b)x + ab$

2. Consider the polynomial  $3 - 2x - 3x^2$ . What is its:

(a) degree? 2 (b) leading coefficient? -3

3. Compute the following:

(a) Subtract  $\frac{1}{4}x^2 + \frac{7}{2}x$  from  $\frac{1}{2}x^2 - \frac{1}{3}x - \frac{1}{6}$   $\frac{1}{4}x^2 - \frac{23}{6}x - \frac{1}{6}$

(b)  $(x^2 + 3)(x^3 - 2x^2 - 5)$   $x^5 - 2x^4 + 3x^3 - 11x^2 - 15$

(c)  $-3[2(x-3) - 5x] - 5[-5(2x-1) - 4(x+2)]$   $79x + 33$

(d) Add  $5x^2 - 4x + 2$  and  $-6 + 9x - 3x^2 + x^3$   $x^3 + 2x^2 + 5x - 4$

(e)  $(5x-4)^2 - (5x+4)^2 =$   $-80x$

4. Evaluate  $3x^2 - 4x - 5$  when  $x = 2$   $-1$

Bonus Question (you must complete all other problems to be eligible):

Factor completely:  $x^3 - y^3 =$   $(x-y)(x^2 + xy + y^2)$