Math 099 - Summer 2010 - Test 4

Instructor: Dr. Francesco Strazzullo Name KEY

Instructions. Only calculators are allowed on this examination. Point values of each problem are indicated. **Always use the appropriate wording and units of measure in your answers (when applicable). SHOW YOUR WORK NEATLY, PLEASE (no work, no credit).**

1. Expand the following polynomials:

   (a) (25*pts*) $(x-7)(3x+2)$

   $= x\cdot(3x) + x\cdot 2 + (-7)(3x) + (-7)\cdot 2$

   $= 3x^2 + 2x - 21x - 14$

   $= 3x^2 - 19x - 14$

   (b) (25*pts*) $(2x-3)^2$ FOIL OR FORMULA: $(a+b)^2 = a^2 + 2ab + b^2$

   $= (2x)^2 + 2(2x)\cdot(-3) + (-3)^2$

   $= 4x^2 - 12x + 9$

2. Factor the following polynomials:

   (a) (25*pts*) $2x^2 - 10x + 12$

   PRODUCT: 6
   SUM: -5

   $= 2(x^2 - 5x + 6)$

   $= 2(x-2)(x-3)$

   (b) (25*pts*) $16x^2 - 81$ DIFFERENCE OF SQUARES: $a^2 - b^2 = (a+b)(a-b)$

   $= (4x)^2 - 9^2$

   $= (4x+9)(4x-9)$

100

3. (25*pts*) Compute the distance between the points $(-1, 2)$ and $(4, 3)$.

" DISTANCE BETWEEN (x_1, y_1) AND (x_2, y_2) " $= \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$

HERE: $d = \sqrt{(-1-4)^2 + (2-3)^2}$

$= \sqrt{25 + 1}$

$= \sqrt{26}$

≈ 5.099