

Math 220 – Homework 13

Due at the beginning of your Final Exam.

PART A

Problems from the textbook:

- Section 5.4 # 2, 6(c,d),8(b,c),10a, 19.

PART B

1. Determine the following, representing your answer in the compact standard form:

$$\gcd(2^{2016} \cdot 3^4 \cdot 55 \cdot 7^2, 6 \cdot 3^2 \cdot 77)$$

2. Prove that if p is a prime number greater than 3, then p is of the form $3k + 1$ or $3k + 2$.
3. Let $a, b, c, d \in \mathbf{Z}$. Prove or disprove the following statements.
 - (a) $2|ab(a + b)$.
 - (b) $(a|b \wedge c|d) \Rightarrow ac|bd$.
 - (c) If $a|b$ and $b|a$ then $a = b$.