MATH 115, SUMMER 2012
QUIZ 1
THURSDAY, JUNE 21ST

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Please show your work carefully and write neatly. Make sure to double-check your answers. There are 20 points total.

(1) (6 points) Calculate the greatest common divisor of 115 and 585. Then express this gcd as a linear combination of 115 and 585.

(2) (6 points) Explain why there are no integers x and y satisfying the equation

$$986x + 406y = -29$$

(3) (True or False - 2 points each)

(a) If n is any integer, then n and $n^2 + n + 1$ are relatively prime.

(b) If a, b, and c are three integers, not all zero, and their gcd (a, b, c) is 1, then the gcd of ab and c is 1.

(c) If a, b, c are three integers such that $ac|bc$, then $a|b$.

(d) If a and b are two integers such that $(a, 4) = (b, 4) = 2$, then $(a+b, 4) = 4$.