

FRIABLE VALUES OF BINARY FORMS

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ABSTRACT. Let $F \in \mathbb{Z}[X, Y]$ be an integral binary form of degree $g \geq 2$, and let

$$\Psi_F(x, y) := \text{card}\{1 \leq a, b \leq x : P^+(F(a, b)) \leq y\}$$

where as usual $P^+(n)$ denotes the largest prime factor of n . It is proved that $\Psi_F(x, y) \asymp x^2$ for $y = x^{g-2+\varepsilon}$ in general, and $y = x^{1/\sqrt{e}+\varepsilon}$ if $g = 3$. Better results are obtained if F is reducible.

To the memory of our friend and colleague George Greaves

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