$\boxed{2.21}$ By 2.19 above, the principal genus consists only of the principal reduced form x^2+6y^2 (for $D=-24$) ; and by Corol. 27 : p is represented by (a/the) form in the principal genus $\Leftrightarrow p \equiv \beta^2$ or β^2+6 (mod 24) $\Leftrightarrow p \equiv 1, 7$ (mod 24).
(The rest of the statements are proved exactly the same way)

$\boxed{2.27}$ (a) Using the hint, we see that ($\sim$: "proper" equivalence)

$$\left.\begin{array}{l} f \sim px^2+bxy+cy^2 \\ g \sim px^2+\beta xy+\theta y^2 \end{array}\right. \quad \text{for some } b, c, \beta, \theta \in \mathbb{Z}.$$

By the reduction theorem (PROOF of the), we see that we may assume $|b| \leq p$. $|\beta| \leq p$

But since $\text{discr}(f) = \text{discr}(g)$, it follows that

$$(*)\ b^2-4pc = \beta^2-4p\theta \quad \Rightarrow \quad b \equiv \mp\beta \pmod p. \qquad \Rightarrow \quad b \equiv \beta \pmod 2$$

But since $b, \beta \in [-p, p]$, we see that $\beta \in \{b, -b, p+b$ (only if $b<0$), $p-b$ (only if $b>0$)$\}$

But since $b \equiv \beta$ (mod 2), it follows that $\beta \in \{b, -b\}$ is the only possibility, hence by $(*)$ $c = \theta$ as well.

So

$$\left.\begin{array}{l} f \sim px^2+bxy+cy^2 \\ g \sim px^2 \pm bxy+cy^2 \end{array}\right\} \text{These two are (possibly improperly) equivalent.} \qquad \square$$

(b) By the proof of part (a) above, we see that

$$x^2+ny^2 \sim px^2+bxy+cy^2$$

$$g(x,y) \sim px^2 \pm bxy+cy^2$$

By problem 2.25 (or 2.26) $x^2+ny^2 \sim px^2+bxy+cy^2 \Leftrightarrow$ Their opposites are equiv. $\Leftrightarrow$