$$^{X}\!\!\bigtriangleup\!\!\mathbb{F}\!\!\blacktriangleleft = \left\{ \mathfrak{1} \sqsubset {}^{X}\!\!\bigtriangleup\!\!\mathbb{F} \right\} \leftarrow {}^{X}\!\!\bigtriangleup\!\!\mathbb{F}$$

$^{X}\!\!\bigtriangleup\!\!\mathbb{F}$ principal

$$0 \neq \mathfrak{1} \sqsubset {}^{X}\!\!\bigtriangleup\!\!\mathbb{F}$$

$$m = \min \frac{\underset{\leftarrow}{p}}{0 \neq p \in \mathfrak{1}} \geqslant 0$$

$$\bigvee_{0 \neq p \in \mathfrak{1}} \underset{\leftarrow}{p} = m \Rightarrow p\,{}^{X}\!\!\bigtriangleup\!\!\mathbb{F} \subset \mathfrak{1}$$

$$\mathfrak{1} \in \mathfrak{1} \Rightarrow \bigvee_{\mathfrak{1} = pq + r} \underset{\leftarrow}{r} < m \Rightarrow r = \mathfrak{1} - pq \in \mathfrak{1} + p\,{}^{X}\!\!\bigtriangleup\!\!\mathbb{F} \subset \mathfrak{1}$$

$$\Rightarrow r = 0 \Rightarrow \mathfrak{1} = pq \in p\,{}^{X}\!\!\bigtriangleup\!\!\mathbb{F} \Rightarrow \mathfrak{1} = p\,{}^{X}\!\!\bigtriangleup\!\!\mathbb{F}$$