

Regular expression

$\{a, b\}^*$ that do not contain aba

$$(a^+bb + b^+a^*bb)^* a^* b^*$$

1) Whenever we get " ab^4 " we must either end the string or add a " b^4 " by force: a^+bb .

2) And if we are starting from b then we can append as many a 's we want at the end: b^+a^*bb .