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## *Setup and the first examples*



献出心脏吧！

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## Setup and the first examples

**Example 1.** Let  $\mathbf{k}$  be an algebraically closed field and  $A$  the localization of  $\mathbf{k}[x]$  at  $(x)$ . Let  $S = \operatorname{Spec} A$  and  $X = \operatorname{Spec} A[y]$ . There are three types of points in  $X$ :

- (i) closed points with residue field  $\mathbf{k}$ , like  $p = (x, y - a)$ ;
- (ii) closed points with residue field  $\mathbf{k}(y)$ , like  $P = (xy - 1)$ ;
- (iii) non-closed points, like  $\eta_1 = (x), \eta_2 = (y), \eta_3 = (x - y)$ .