



## Main result

**Proposition 1.**  *$M \subset \mathbf{R}^n$  is affine if and only if there exists  $b \in \mathbf{R}^m$  and  $B \in \mathbf{R}^{m \times n}$  such that*

$$M = \{x \in \mathbf{R}^n \mid Bx = b\}.$$



