

$$F : A \subseteq \mathbb{R}^n \longrightarrow \mathbb{R}^m$$

- A domain of  $F$
- $F(A) = \{ F(x) \mid x \in A \}$  image of  $F$
- $m = 1$  :  $F$  is a scalar-valued function  
 $m > 1$  :  $F$  is a vector-valued function
- $\text{graph}(F) := \{ (x, F(x)) \mid x \in A \} \subset \mathbb{R}^n \times \mathbb{R}^m$   
the graph of  $F$